

**Tactical  
Wheeled  
Vehicles  
Conference,  
Monterey, CA.**

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# **INDUSTRIAL COMMITTEE OF TANK & AUTOMOTIVE PRODUCERS (ICTAP)**

Dave Longley, Recorder  
United Defense

# ICTAP CHARTER

- **PURPOSE:** Forum for principal managers at TACOM and Senior Executives from industry to meet and review issues of common interest and concerns

- **OBJECTIVES:**

- Forum for discussion and exchange of views
- Feedback from senior industry representatives
- Discuss DoD, Army and TACOM Policies
- Discuss emerging issues in Government and Industry which affect readiness of tank/automotive systems

# ICTAP MEMBERSHIP

## GOVERNMENT

- CG TACOM
- PEO GCSS
- Director, TARDEC
- Director, IMMC
- Director, Acquisition Center
- Deputy for Acquisitions
- Ex. Direction Operations, TARDEC
- Director Defense Supply Center, Columbus

## NDIA

- Vice President

\*Permanent Member

(Membership 2 Years-1/2 Rotate Yearly)

## INDUSTRY

- Oshkosh\*
- AM General\*
- Steward & Stevenson SVC\*
- GM Canada
- Caterpillar
- Allison Transmission
- United Defense\*
- General Dynamics Land Sys\*
- Premier Prof. Systems
- Motor Products Intl.
- Lear Siegler SVC
- Barnes & Reinecke
- LAU Defense Systems

# **ICTAP CHARTER (Continued)**

- **VP Operations NDIA, in coordination with CG TACOM, Appoint a Chairman**
  - **1st Chairman: Tom Rabaut, President and CEO, United Defense**
  - **Current Chairman, James Armour, President and CEO, AM General Corp.**
  - **Serves 2 Years**
- **ICTAP meets 2-3 times per year**
  - **4 meetings to-date**

# ICTAP

- **Four meetings since chartered in March '97**
  - NDIA hosted inaugural meeting
  - Industry hosted second meeting
  - TACOM hosted third meeting
  - Industry hosted fourth meeting
- **Topics for discussion are generated by Government/Industry/NDIA Members**

# ICTAP

- **First Meeting**
  - June 1997
  - Hosted by NDIA
  - General Exchange of Information
- **Agenda**
  - TACOM: Goals/Objectives
  - TARDEC: Status of Programs
  - Industry: Company Organizations
  - Charter Discussion

# ICTAP

- **Second Meeting: November 1997**
  - **Host: United Defense, Anniston, AL**
- **Agenda:**
  - **MG Beauchamp: State of TACOM**
  - **MG Michitsch: Industry Study-AAN**
  - **Mr. Weinberg, Caterpillar: Best Value**
  - **Mr. Mehney, TACOM: Acquisition Reform**
  - **Tour/Briefing: Anniston Army Depot**
  - **Tour UDLP M113 Facility - Partnering**



# ICTAP

- **Third Meeting: May 1997**
  - **Host: TACOM, MG Beauchamp**
- **Agenda**
  - **MG(R) Greenberg: NDIA Overview**
  - **Col. Dougherty: DLA/DSCC Overview**
  - **Mr. Holly:**
    - » **TACOM Focused**
    - Sustainment Concept**

# **ICTAP**

- **Third Meeting (Continued)**
  - **Mr. Young: TACOM Industrial Base Management**
  - **Mr. Siegel: PM Abrams, Obsolescence Integrated Circuits**
  - **Mr. O'Bryon: OSD/DOT&E, Live Fire Testing Status**

# ICTAP

- **Fourth Meeting: December 1998**
  - **Host: Pulse Tech**
- **Agenda**
  - **MG Beauchamp: TACOM Reorganization**
  - **Al Puzzouli: Deputy PEO, GCSS**
    - **Creation of PEOs**
    - **Who, Where, What is PEO, GCSS**
    - **Managing Systems Life Cycle Costs**
    - **How PEO, GCSS Manages**

# ICTAP

- **Agenda (Continued)**
  - **LTC Cooper: PM Abrams**
    - **Challenges Now Through 2030**
    - **O&S Cost Initiatives**
      - **Engine Modernization**
      - **Contractor Logistic Support (CLS)**
      - **Abrams Integrated Management (AIM)**
      - **Modernization Through Spares**

# ICTAP

- **Agenda (Continued)**
  - **Mr. Art Adlam: TACOM**
  - **Simulation Based Acquisition, Government Perspective**
  - **SBA → SMART**
  - **SBA At TACOM**
    - **Virtual Mock-Up**
    - **Man-In-The-Loop Motion Base Simulation**
    - **Virtual Factory**

# ICTAP

- **Agenda (Continued)**
  - **Simulation Based Acquisition - Industry Perspective**
    - **What is it?**
    - **UDLP Initiatives**
      - **Culture**
        - » **IPPTs**
      - **Process**
        - » **Simulation Based Design**
        - » **Simulation - Emulation - Stimulation**
        - » **Integrated Product CAD/CAM**

# ICTAP

- **Agenda (Continued)**
  - **Environment**
    - » **Common Operating Environment**
    - » **Virtual Enterprise Environment**
    - » **System Integration Environment**

# **ICTAP**

- **Next Meeting: 19 April, Atlanta, GA**
  - **Host: NDIA**
- **Agenda (tentative)**
  - **Focus Sustainment Update: TACOM**
  - **Reorganization of Foreign Military Sales**
  - **TACOM Reorganization - Deputy for Corporate Management**



# ICTAP

- Publishing an article on Simulation Based Acquisition: “*A New Way To Help The Soldier*”
  - National Defense Magazine (Jan/Feb)
  - Other Defense/R&D/Academic Journals
- ICTAP Minutes and Briefings on TACOM Web Page

**REMARKS AS PREPARED FOR DELIVERY BY**

**The Honorable Paul J. Hoyer  
Assistant Secretary of the Army (RD&A)  
Keynote Address  
1999 Tactical Wheeled Vehicles Conference  
"How Healthy is Our Fleet?"  
Monterey, California  
February 1, 1999**

Earlier this month, I went on a staff ride to Manassas with some of the senior military leaders in Army Acquisition and some of the senior folks from the Industry side. On a Staff Ride, we go out to a battlefield with an Army Historian, walk the terrain and learn about the factors that defined the outcome of the battle. Yesterday, as I flew out here, I fell to musing about the role of tactical wheeled vehicles at the First Battle of Bull Run.

At that time, our tactical wheeled vehicles were mule-drawn wagons. A six-mule wagon could haul a maximum of 4000 pounds on good roads in the best of conditions. In practice, the load seldom exceeded 2000 pounds and half of that was feed for them Army's mules and horses. A wagon could travel between 12 and 24 miles per day. You can see how the tactical wheeled vehicles of the day limited the reach and effectiveness of the armies.

At the beginning of the Civil War, around the time of the First Battle of Bull Run, the standard for the Union Army was 28 wagons per thousand men. By 1864, the growing recognition of the value these vehicles created caused the Union to increase this ratio to 36 wagons per thousand men. On the "march to the sea", Sherman's army operated

with 40 wagons per thousand soldiers. Much had changed since First Bull Run, but many of the principles of ground warfare remain essentially unchanged. Tactical wheeled vehicles were important then, and they are important now.

The Battle of First Bull Run occurred during a time of revolution in military affairs. Up to that time, it was the largest battle fought on the American continent, with about 18,000 soldiers engaged on each side. The commanders in that battle had never commanded forces on this scale, so the battle tactics stopped at the regimental level. First Bull Run marked our first use of rifled shot and rifled artillery – technological advances that dramatically changed tactics.

We are now in a similar period of revolution in military affairs. The application of information technology to warfare has enormous implications to both strategy and equipment. Our business practices are also changing dramatically. It is not simply, as is sometimes said, that we must achieve a revolution in business affairs to pay for the revolution in military affairs. Yes, we need to find efficiencies, and it is terribly important to do so. We will not be able to buy all that we need if we cannot find those efficiencies. But the operational needs of the Army demand, by

themselves, that we change our ways of doing business. It will not be possible to field the weapon systems essential to the digitized force and the Army After Next without changing the way we develop, acquire, and support them.

We will have the fundamental platforms we are digitizing today for, perhaps, twenty-five to thirty years. During that time, we will add platforms to the system of systems that will be the digitized force of the future, and will be part of the Army After Next. We want the systems we will add in the future to be compatible with the systems we plan to field by 2000. And we want the ability to upgrade the systems we are building today to the performance that we know technology advances will make possible for future systems.

The fact that we are going to have many of our platforms in place for so many years means that we will need to modernize them significantly over time. We may give the wrong impression when we say that seventy percent of the platforms for the Army After Next are fielded now or shortly will be. That is true enough, in terms of the outside appearance. Many of our Tactical Wheeled Vehicles (HMMWV, FMTV, PLS, HETS) in the field today will be part of the Army After Next. They will probably look

much the same as they do today. We do not plan to give them a cosmetic face-lift, but they will get numerous transplants. Our 33-Ton Truck/Trailer, the Palletized Load System (PLS), will still look like today's PLS, but it will have more efficient commercial engines with a digitized cab that incorporates both a Movement Tracking System and a "Sealed Hood" concept. This digitized cab will give our soldiers enhanced mobility, capacity, reliability, and situational awareness.

Digitization, as with the digitized cab in PLS, is the application of information technologies to Army weapon systems so our soldiers and leaders can acquire, exchange, and employ timely information throughout the battlespace. Whether built in a platform or added capability, digitization depends on information and communication technologies. It is the Army's highest research, development and acquisition priority. We have all seen the rapid advances of the past fifteen years, since IBM brought out its first personal computer. The computer chips that these technologies depend on are doubling in power every eighteen months. Our time to field for a fairly large system is about twelve years. How can we keep the systems we will field in the next few years compatible with the systems we will be fielding ten or

twenty years from now? Both will be part of the digitized Army of 2020.

We will have to change the way we do business. We used to design point solutions for specific platforms using military-unique components and architectures. To succeed in the future, we must use open architectures that allow horizontal technology integration across systems of systems. It is not simply that commercial information technologies are cheaper, although they can be. Nor is it always true that commercial solutions are more capable than the point solutions we have incorporated in the past. It will often be possible to design a military-unique solution that is more capable than anything presently available from the commercial market. The problem is that we take an average of twelve years to field a major system, while the power of the computer chips on which the commercial digital technology depends doubles every eighteen months. The most important reason for us to gain access to commercial technology is not to save money; it is to get on the commercial innovation cycle using an open architecture. If we do this, we will gain the ability to modernize our weaponry through the timely insertion of communications and information technology – brain transplants.

The use of open architectures that accept commercial upgrades is not limited to digital technologies. A major goal of the FMTV program was to simplify the overall support system. Specifically, commonality of components was a design criterion. As a result, there is more than eighty- percent commonality between the Light Medium Tactical Vehicle (LMTV) and the Medium Tactical Vehicle (MTV). This translates to a reduction in inventory and material handling requirements, as well as simplified operator and maintenance training. The approach also allows insertion of improved technologies, as we are doing with the current buy.

As we modernize to add capability, we must also bring down operation and support (O&S) costs. One important initiative in this area is Modernization Through Spares. Tires and batteries are major cost drivers for our Tactical Wheeled Vehicles. Let's take our Heavy Expanded Mobility Tactical Truck (HEMTT) fleet – 12,600 strong – each with eight tires. That's more than 100,000 tires. By capitalizing on the modernization through spares initiative, we replaced the old tires with ones that have a higher load rating, improved tread design, and are common with PLS and the Heavy Equipment Transporter System (HETS). The new tire can even be patched.



I want to apply this concept to the rest of the fleet. As we explore all areas to cut O&S costs and, at the same time, reduce the logistics burden, it seems to me that a significant reduction in the different types of tires we use and carry around is important. Some have mentioned a fifty percent reduction. I don't know what the answer is, but we need to take a serious look at this.

I also mentioned that batteries are a major cost driver in our Tactical Wheeled Vehicles. What is being done to address this problem? The PLS program is replacing its current 145 amp alternator with a 200 amp that provides more output during high load events. Also, a master disconnect switch has been added to prevent the constant draw of current placed on the battery by the Electronic Control Units. Together, these improvements are extending battery life in PLS.

How do we come to grips with the fact that we must either invest in the future or else consume ourselves with O&S costs? The Army will continue to recapitalize our vehicles where it makes sense. We are completing a very successful 2-1/2 ton remanufacturing program this year that helped modernize our medium fleet and control increasing O&S costs while the Family

of Medium Tactical Vehicles (FMTV) program was ramping up. We will begin the same type of program for the HEMTT fleet starting in Fiscal Year 2000 in order to maintain readiness and control O&S costs until the Future Heavy Tactical Truck program is in place around the 2010 time frame. The HEMTT remanufacturing program will also provide an opportunity to adjust the mix of HEMTT variants by converting cargo trucks into HEMTTs with a Load Handling System similar to PLS.

O&S costs can make up 70 to 80 percent of a system's total life cycle cost. Reducing total ownership costs for Army systems is a high priority. The acquisition and logistics communities have instituted reform initiatives targeting lower system ownership costs. All of us charged with giving soldiers what they need must work together on this: those involved in combat development, requirements determination, training development, financial management, materiel development, and logistics. Integrated Process Teams or IPTs, with representatives from these functional disciplines, are a program tool for identifying total ownership cost reduction opportunities. Our plan is to find ways to save both acquisition and O&S dollars during system design as well as through deployed system modifications and upgrades. I have already given you an example of deployed system

modifications, so let me try to give you an example in system design.

Considering the earliest stages of development, the Army developed the 21<sup>st</sup> Century Truck concept with a primary goal to reduce emissions and improve fuel economy in future light, medium, and heavy commercial and military trucks. Last September, I approved the implementation plan for 21<sup>st</sup> Century Truck. It is consistent with Army After Next goals to reduce the fuel requirements of a deployed force. Technology areas will focus on propulsion, vehicle intelligence, advanced materials, aerodynamics, and alternative fuels. The key to this effort will be to develop a strong, enduring partnership among government, commercial industry, and academia. I am pleased by the support we have received from major commercial truck, powertrain, and component manufacturers.

In the area of modifications and upgrades, we discovered that our High Mobility Multipurpose Wheeled Vehicles (HMMWVs) go through a lot of glow plugs. These are the devices that raise the temperature of the fuel and air mixture in diesel engines when the engine is not hot enough to create combustion. HMMWVs have a protective control box in the ignition that is supposed to

turn on the glow plugs under appropriate conditions. The problem is that soldiers will often turn the ignition on and off repeatedly when they try to start a HMMVW on a cold day. This confused the electronics on our HMMVWs and allowed the glow plugs to reach two thousand degrees Fahrenheit, when they burned out. It is not that the protective control box was badly designed. It was constrained by the technology of the time – our HMMVWs were designed fifteen years ago. Glow plugs are one of the top ten cost drivers in HMMVWs.

To solve this problem, our Tank Automotive and Armaments Command (TACOM) formed a team comprising TACOM's Research, Development and Engineering Center (TARDEC), the Acquisition Center, the HMMVW program manager and the Integrated Material Management Center to analyze the problem. To get the solution into the field, TACOM teamed with Lau Technologies. The result is a new, solid state device based on state-of-the-art commercial technologies. The form factor is exactly the same so replacement is easy.

What did we get? TACOM and Lau have solved our glow plug burnout problem, which used to be one of the top ten cost drivers on HMMVWs. The new protective control box also allows engines to start if several glow plugs are burned out through

normal wear. The bottom line is that we have reduced O&S costs, improved reliability, and given our soldiers an extra margin of safety all at the same time.

I am glad to have this chance to talk to you about how we will provide for the needs of the digitized army and the Army After Next. I have talked about new systems, open architecture, modernization through spares, and recapitalization. All are tactics aimed at our overall strategy of completing digitization and preparing for the Army After Next while dramatically bringing down O&S costs and reducing our logistics footprint. During the next few days, we will have a chance add new ideas. The really good ideas will come from working together. We have big problems to solve. Let's work together and get on with it.

# CONGRESSIONAL PERSPECTIVE

## 1999 TACTICAL WHEELED VEHICLES CONFERENCE

February 1, 1999

Michael Chase  
William Daoulas  
J. David Willson

# FY 1999 CONGRESSIONAL ACTION ON DEFENSE

- Regular Appropriation Bill

- Supplemental Bill

- \$9 Billion
- “Emergency”
- Increased FY 1999 Base for FY 2000
- Less Pressure for FY 1999  
Reprogramming/Rescissions
- Will Not Happen Again This Year

# 106TH CONGRESS

## • Leadership Changes

- New House Speaker
- New SASC Chairman/Subcommittee Chairman
- New HAC Chairman/Subcommittee Chairman

## • Staff Changes

## • Other Changes

- Smaller Republican Majority in the House
- Fewer Veterans
- New House and Senate Rules



# 106th CONGRESS LEGISLATIVE AGENDA

## • Impact of Impeachment Proceedings

### • Issues Intertwined:

- Social Security
- Education
- Tax Cuts
- Defense Increase
- Surplus

## • New Budget Agreement/Summit?

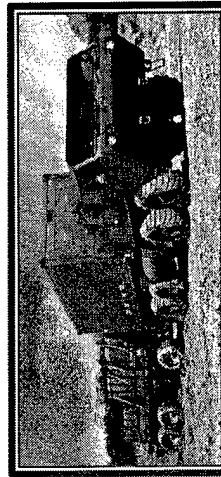
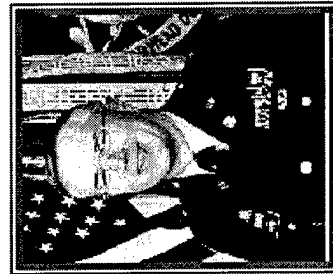
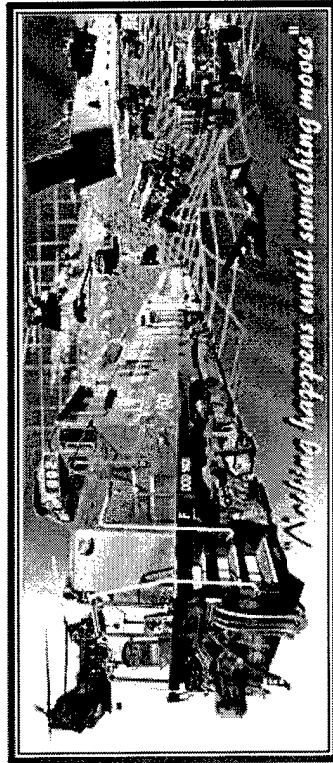
# DEFENSE BUDGET FOR FY 2000

- President's Budget Increase Will Not Be Cut By Congress
- Firewalls Are Down in FY 2000
- Congressional Defense Increases Dependent on Resolution of Other Issues
- Trucks Continue to be Low Priority

FORCE

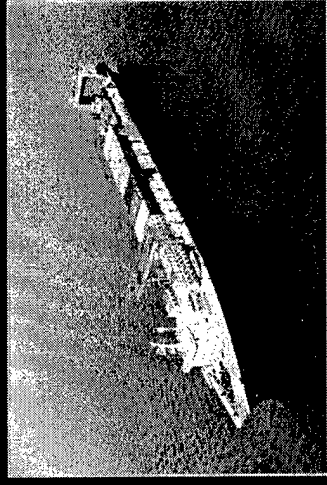
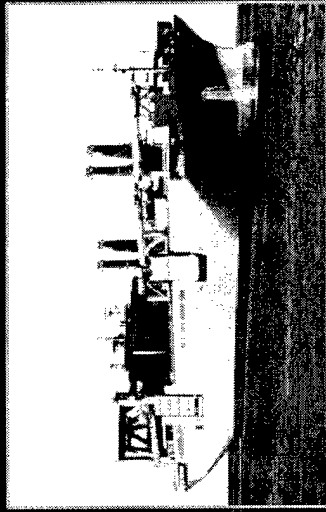


# TRANSPORTATION CORPS

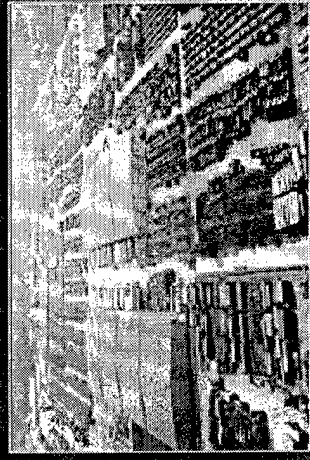
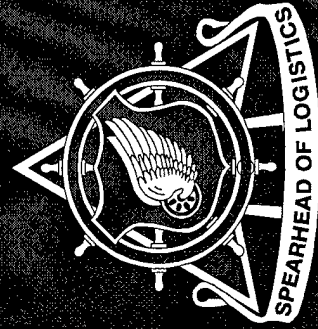
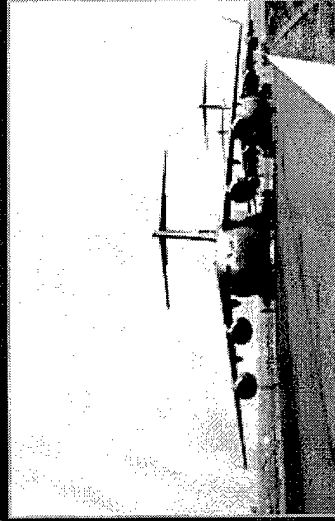


*Chief of Transportation*  
**BG Gilbert S. Harper**





# Strategic Transportation



# **If you look at war as a sport....**

**"In 1939, Hitler had the best Army, the best equipment, the best organization and the whole country behind him. But in 1945, Berlin stood in ruins because Hitler could not win on the road."**

**—Marv Levy, former Head Coach, Buffalo Bills.**



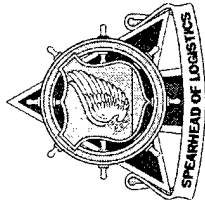
**..... A power projection  
Army must be able to win  
on the road.**

**"A task without vision is drudgery.**

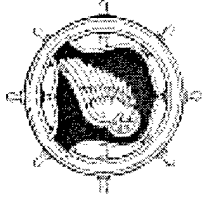
**A vision without a task is a dream.**

**A task with a vision is victory."**

**— Unknown**



# AMERICA'S ARMY TRANSPORTATION CORPS *STRATEGIC VISION*



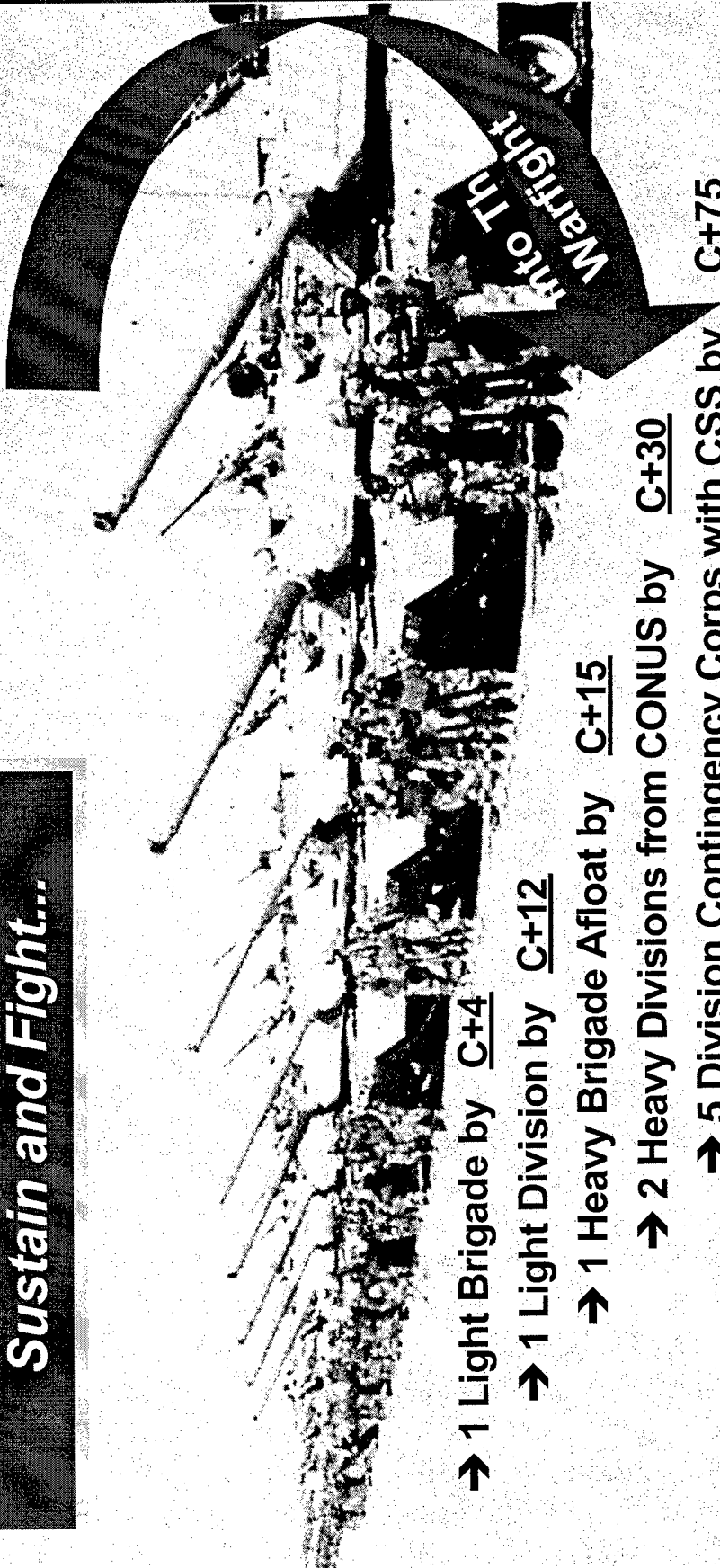
- The Transportation Corps will lead America's Army in the transition to an integrated, transportation-based global distribution system capable of efficient operations in peace and war. It will serve as a combat force multiplier by anticipating and fulfilling wartime theater support demands with unprecedented speed and flexibility.
- The Transportation Corps will lead in the development of force deployment, transportation-based distribution doctrine and integrated training. It will emphasize increased velocity through modernization, synchronization and adaptability in support of our force projection Army.
- The Transportation Corps will leverage emerging technologies and thrive on the digitized battlefield. It will provide movement control and direct delivery to deployed forces in a dynamically fluid, nonlinear battlefield in Force XXI and into the Army After Next.
- The Transportation Corps' soldiers and civilians will lead and perform multifunctional and joint logistics roles. Professional development will produce ethically, technically and tactically sound leaders.
- The Transportation Corps will lead the Department of Defense in deployment and power projection training and education. The Transportation Corps' soldiers and civilians will provide the professional transportation and distribution logistics expertise in Joint Commands and Defense Agencies.

**GILBERT S. HARPER**

**Brigadier General, U.S. Army**  
**Chief of Transportation**

# THE TASK **Dominant**

*The Army Must Be Able To  
Simultaneously Project,  
Sustain and Fight...*

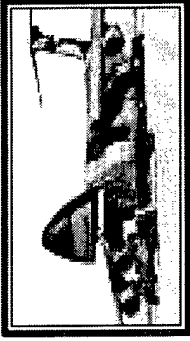
- 
- 1 Light Brigade by C+4
  - 1 Light Division by C+12
  - 1 Heavy Brigade Afloat by C+15
  - 2 Heavy Divisions from CONUS by C+30
  - 5 Division Contingency Corps with CSS by C+75





# Army Deployment Comparisons

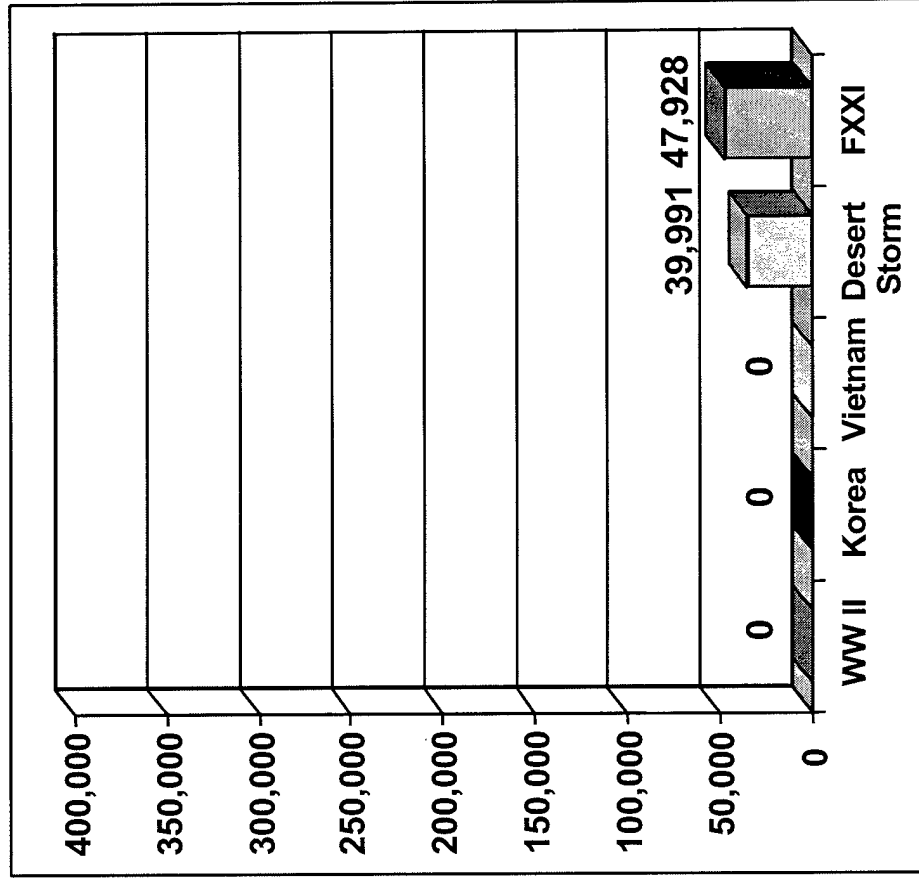
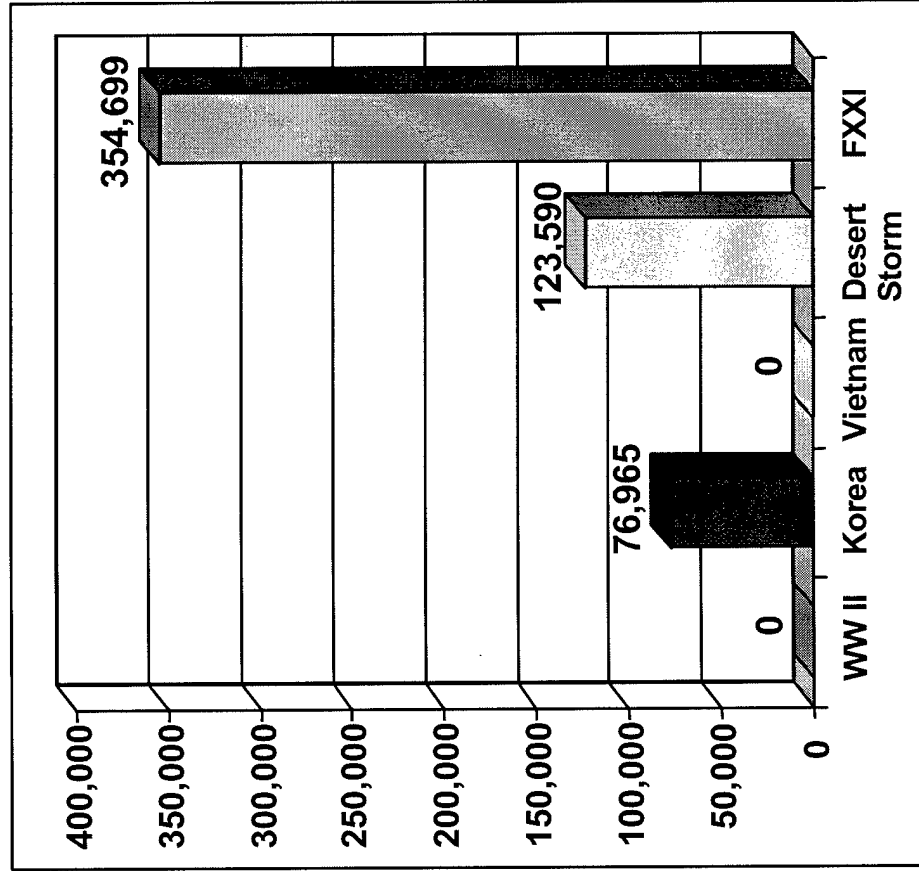
## Tons of Supplies & Equipment



### First 30 Days

SEALIFT

AIRLIFT





# Force Projection

GTN

TC AIMS II

ACOM

USTRANSCOM

(MTMC, AMC, MSC)

TC AIMS II

CINC

THROUGHPUT AIRLIFT

CONUS

MVMT

APOE

TC

UNITS

DEPLOYING

UNITS

SPOE

AIRLIFT

APOD DISCHARGE

DISCHARGE

SEALIFT

SPOD DISCHARGE

DISCHARGE

APS-3

APS ASHORE

Force Projection Doctrine

FM 100-17

(Mob, Deploy, Redeploy, Demob)

FM 100-17-1

(Army Prepo Afloat)

FM 100-17-2

(Army Prepo Ashore)

FM 100-17-3

(RSO&I)

FM 100-17-5

(Redeployment)

CONUS

STRATEGIC LIFT

APOD DISCHARGE

DISCHARGE

THEATER AIR

AIR

HIGHWAY

RAIL

WATERWAYS

SPOD DISCHARGE

DISCHARGE

HIGHWAY

AIR

HIGHWAY

AIR

HIGHWAY

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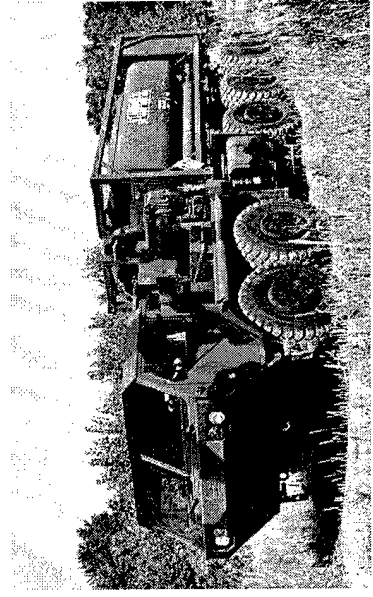
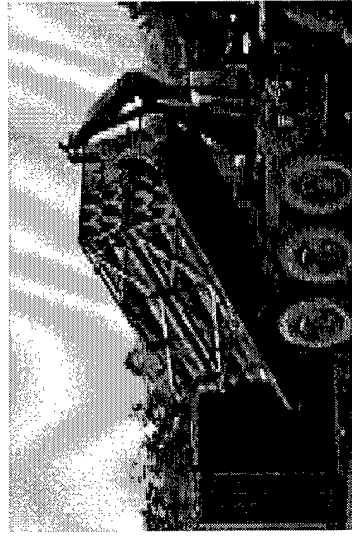
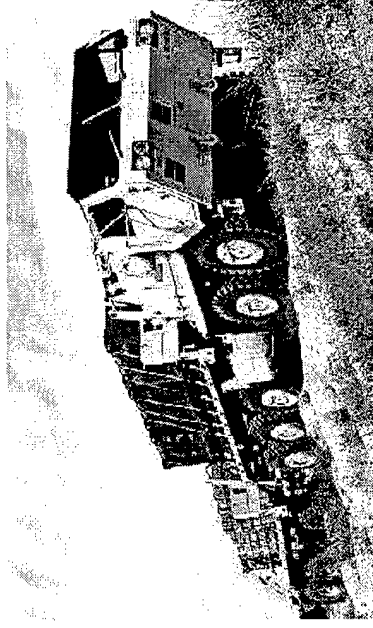
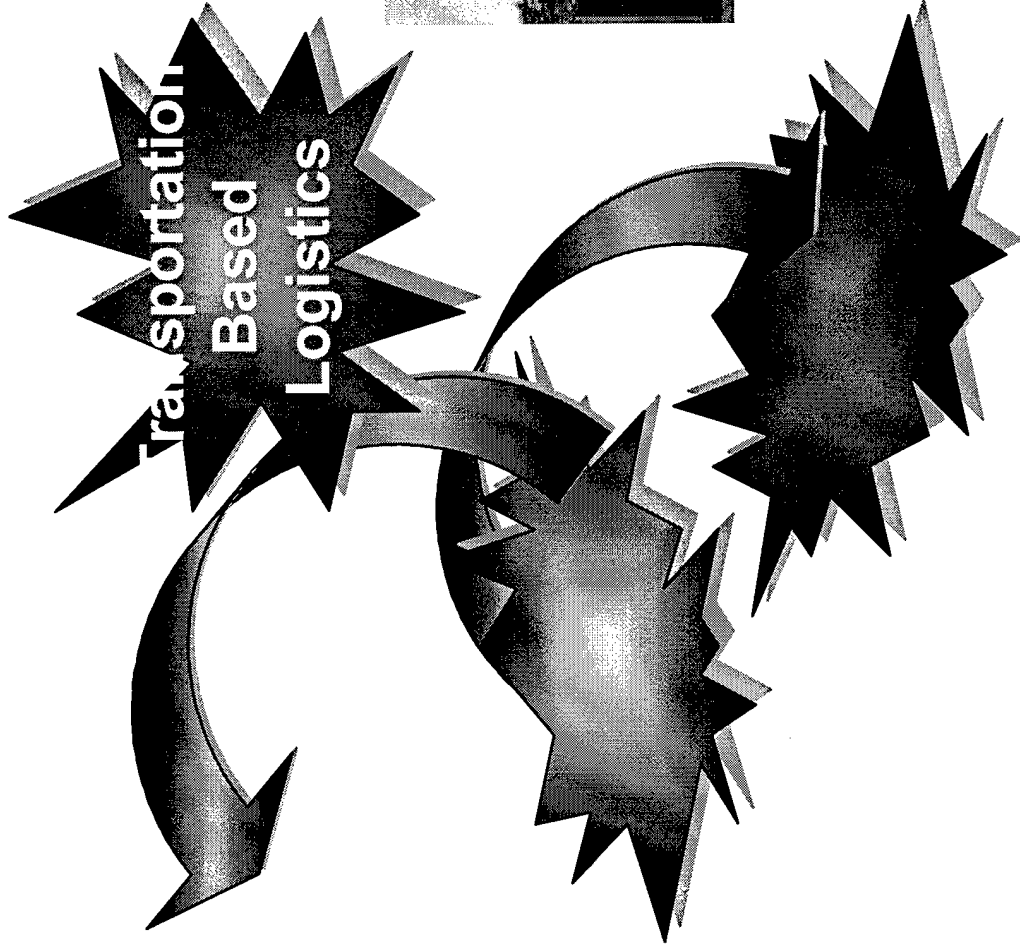
HIGHWAY

AIR

THEATER

TACTICAL AREA

# Operational and Tactical Transportation



# The Future

**"The Future ain't what it used to be"**

— Yogi Berra



# BATTLESPACE

*Force XXI*

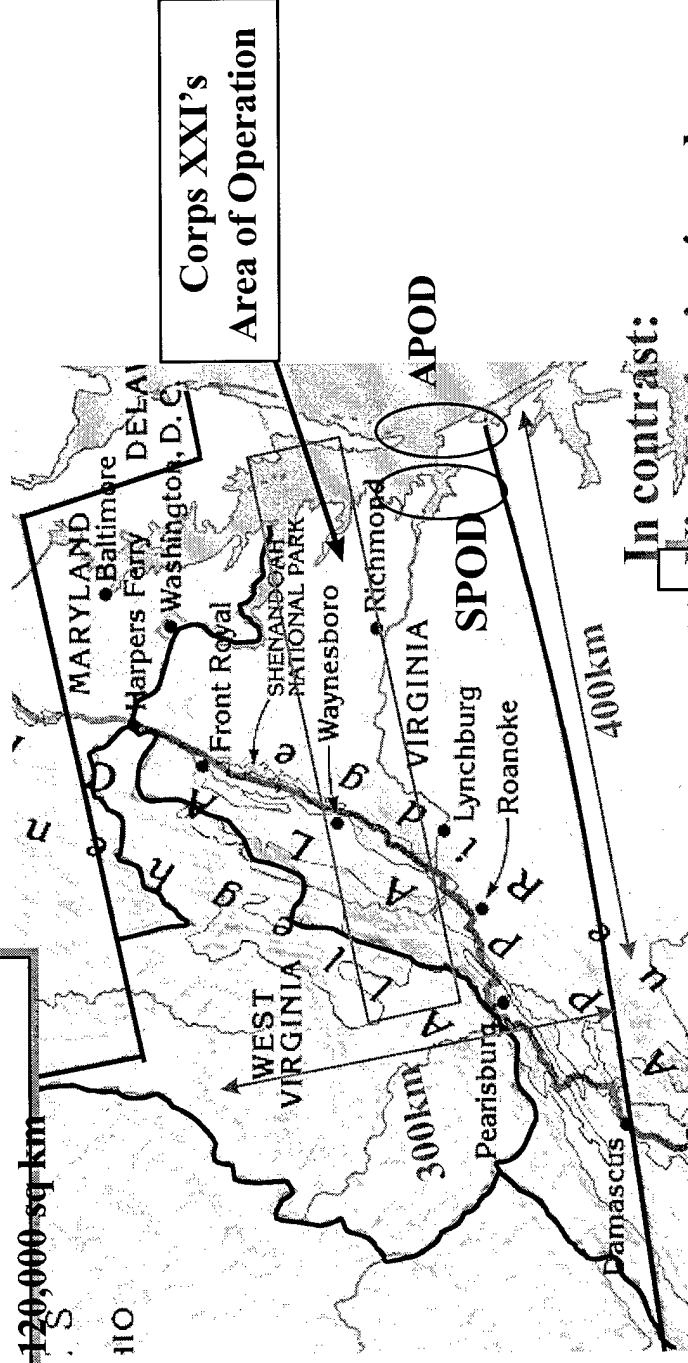
The diagram illustrates the FXXI Corps Battlespace and its constituent Division AOEs. The main battlespace is a large rectangle measuring 400 km by 300 km. It contains two jagged-edged circular areas representing the Division AOEs. The top jagged circle is labeled 'FXXI Corps Battlespace is 120,000 sq km'. The bottom jagged circle is labeled 'FXXI Division Battlespace 240% of AOE'. To the right, a detailed view shows the 'FXXI Division' with a width of 120 km and a height of 200 km. Within this division, the 'AOE Division' is a smaller rectangle measuring 100 km by 100 km.

# Challenging The Laws of Physics

XXXI:

Corps XXI's area is 300km x 400km

This equates to 120,000 sq km



In contrast:

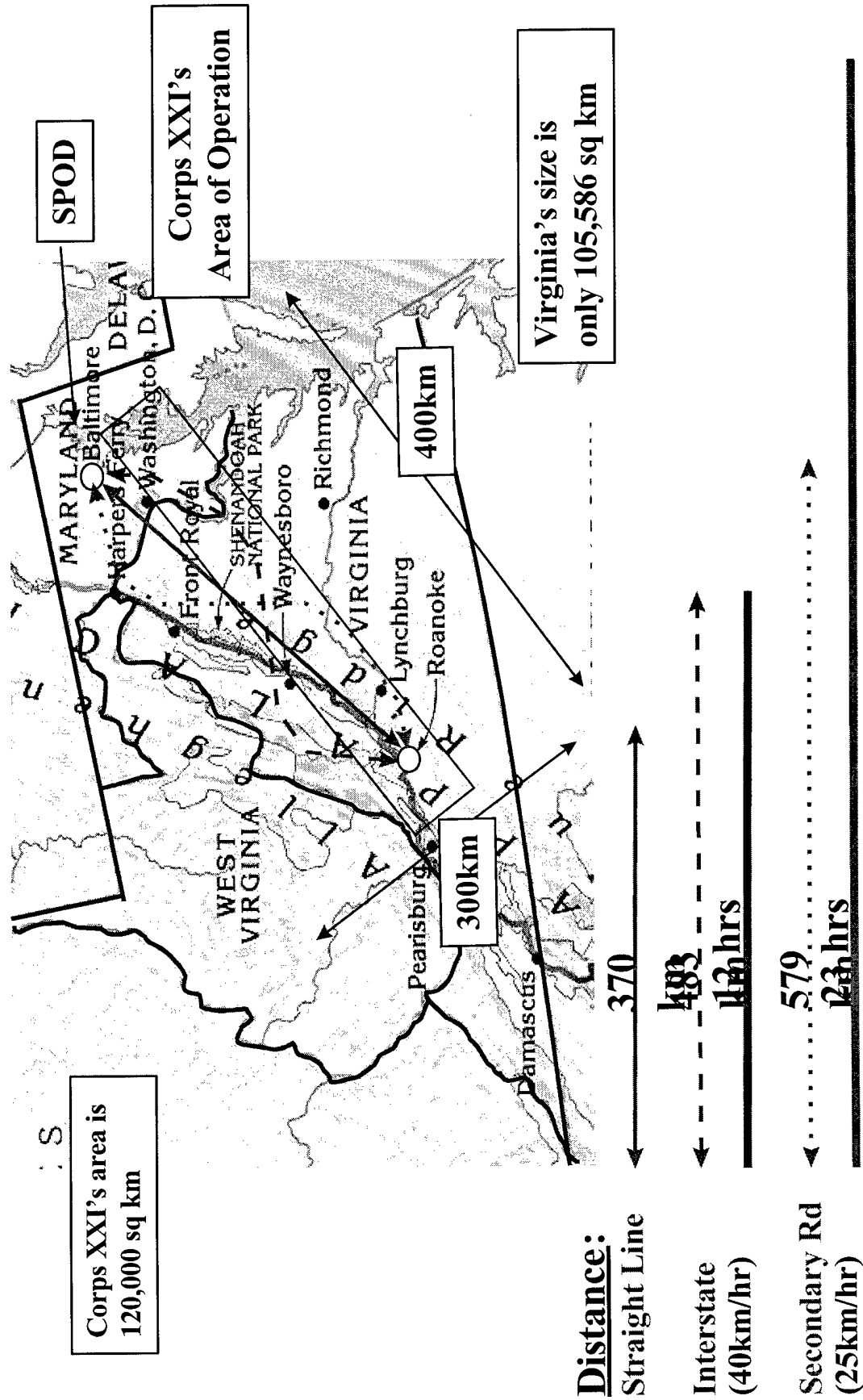
Virginia's size is only

105,586 sq km



# Road Distance

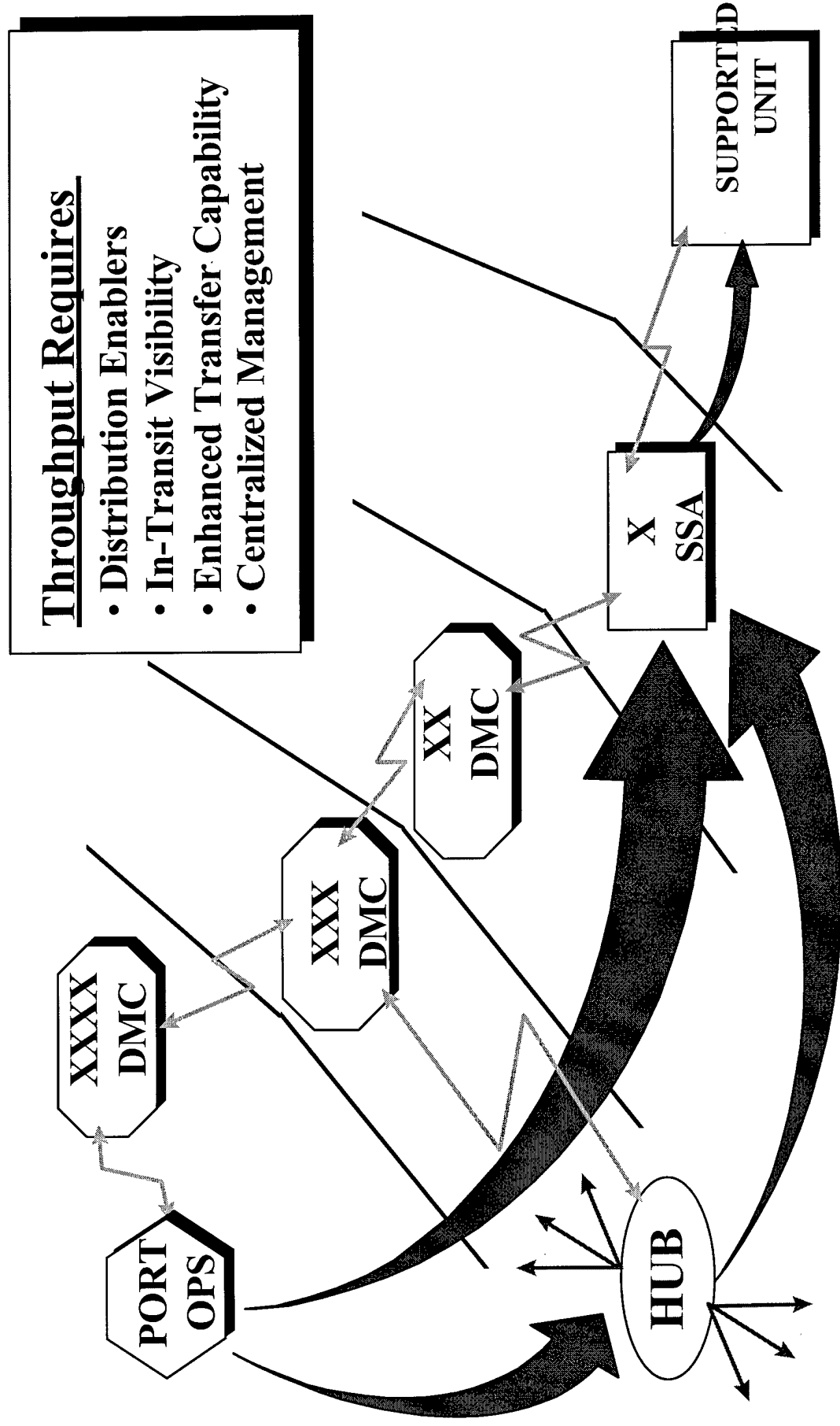
*The Rest of the Story*



# **TRANSPORTATION BASED LOGISTICS**

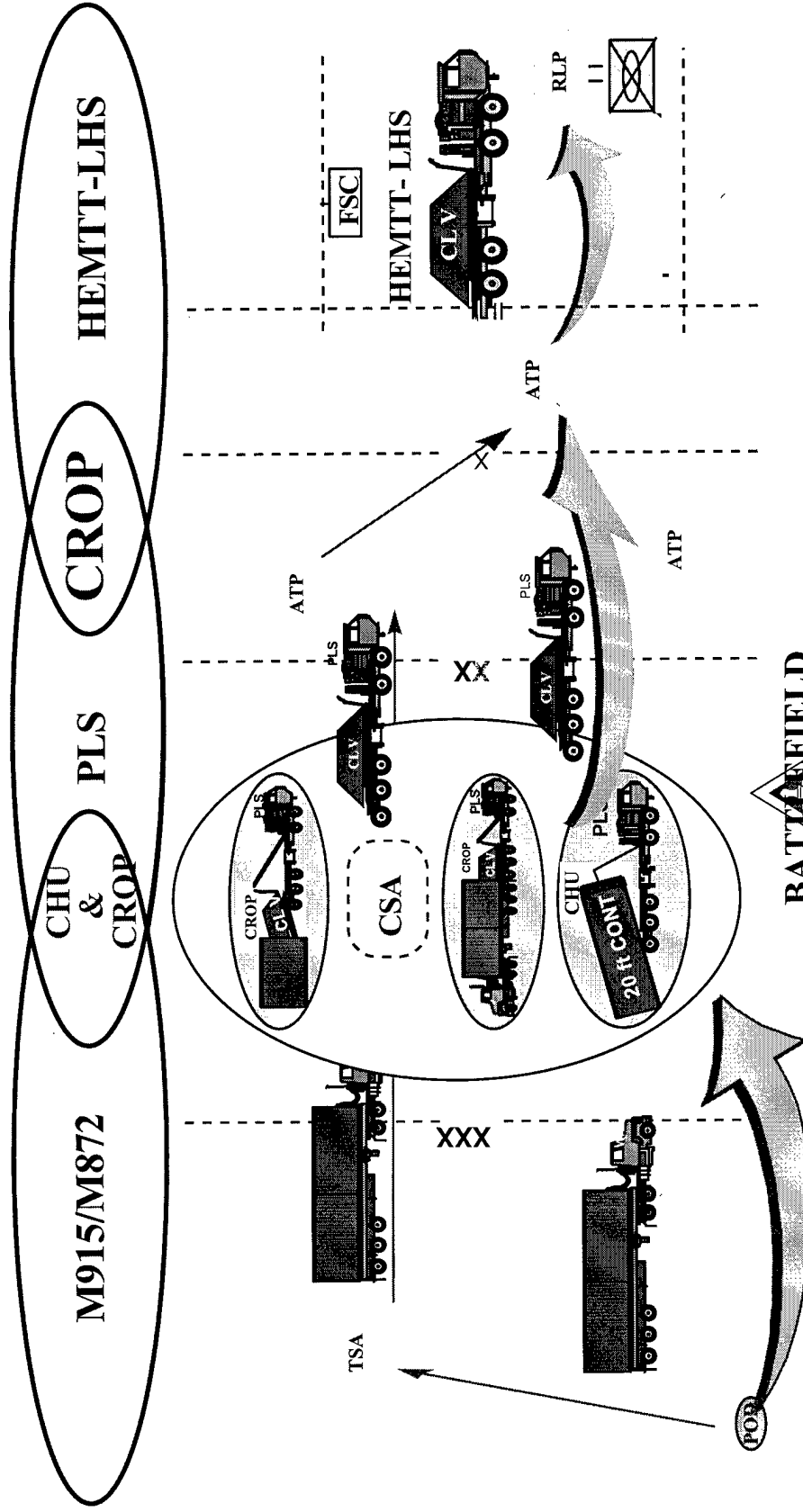
*Force XXI*

# Focused On Throughput

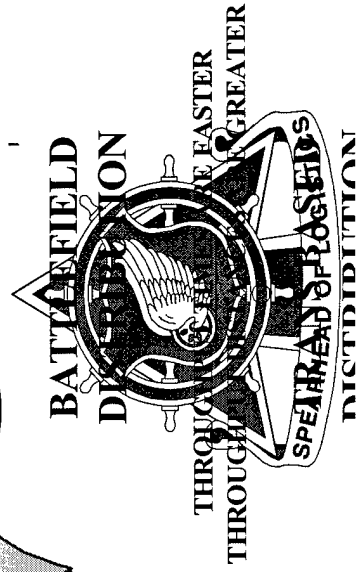


# Battlefield Distribution Enablers

## Linkage



**"REVOLUTION IN  
MILITARY  
LOGISTICS"**



**"REVOLUTION IN  
MILITARY  
AFFAIRS"**

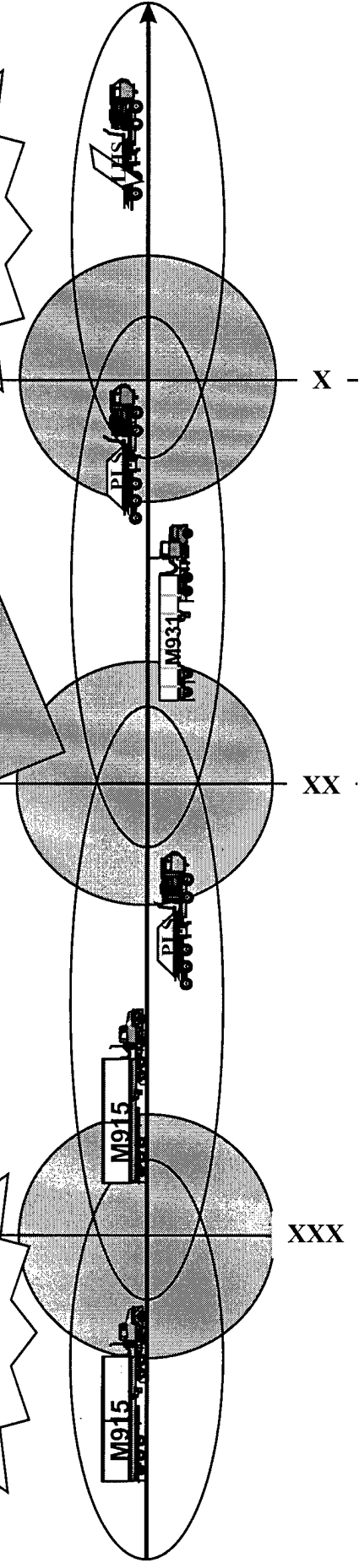
# Intermodal Transfer Challenges

Need  
Enhanced  
Transfer  
Capability

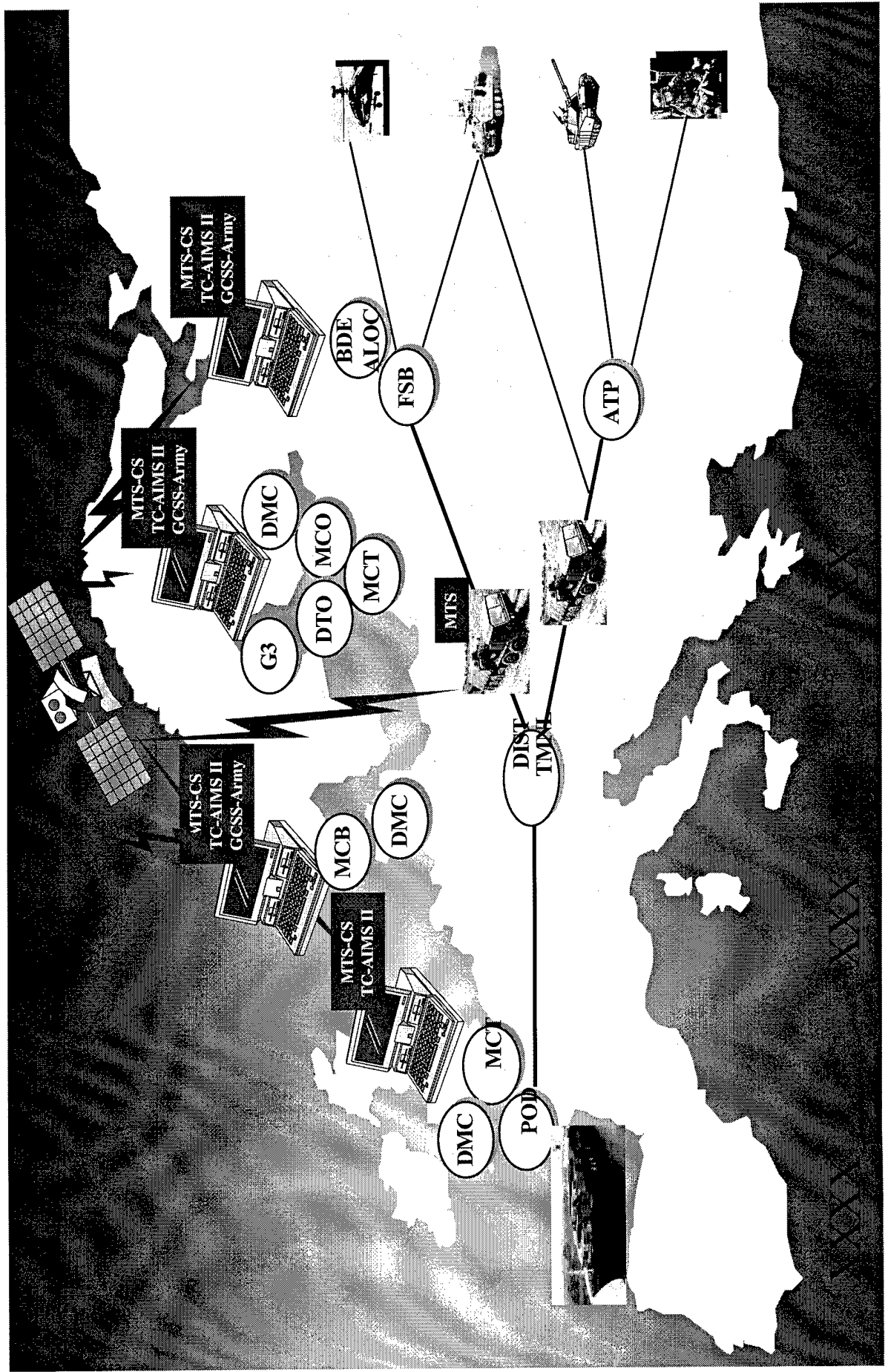
- Transfer from tractor/trailer to PLS/LHS
- Container Handling
  - 40 ft Containers
  - CROP Insertion/Extraction
- Transporting Container Handling Equipment
- Air Transportability
- Rough Terrain
- Mud

Minimize Handling

Maximize Speed



# In-Transit Visibility



**Increased Optempo**

**Smaller Force**

**Velocity**

"We only win at war because we fight another government. If we fought private industry we would not last until noontime."

— **R.I. Fitzhenry**

## **We need industries help**

**Force Projection**

**Greater Distances**

**Declining Budgets**

# What Can Industry Do to Make our TWV's Better?

## **Increased Range**

- Division battle space increased by 240%
- Need Larger fuel capacity
- More fuel efficient engines

## **Increased reliability**

- Need reduced mechanical failures
- Improved sub-component reliability
- reduce the number of critical parts
- Combine/simplify subsystems to reduce failure modes

## **Lightweight & Rugged**

- Larger battle-space
- More dependence on air transport
- Must withstand effects of terrain

## **Better maintainability**

- 11% fewer Division personnel
- Limited number of vehicles – no extras
- Improve diagnostics/prognostics
- Improve trouble-shooting methods
- Quick replacement parts and components
- Lube for life components

## **Better fuel economy**

- Army Goal-50% reduction in fuel consumption
- More fuel efficient power plants

## **Reduced O&S Cost**

- Less Defense \$
- Better to buy beans and bullets than wiper blades
- Top O&S drivers for trucks – batteries, tires, light bulbs, brake pads, and glow plugs.

## **Increase Economic Useful Life**

- Short \$ - can't buy new as often.
- Modernization through spares
- Increased corrosion protection

## **Modularity**

- Same as maintainability
- Must replace forward, fix to the rear

## **Crew Protection**

- Protect crew from injuries
- Improved vehicle survivability
- Lighter weight protection to increase payload



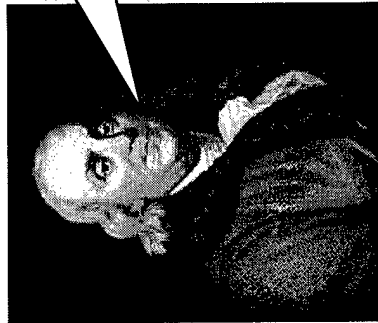


## **Transportation Summit 16-17 DEC 1998 TACOM**

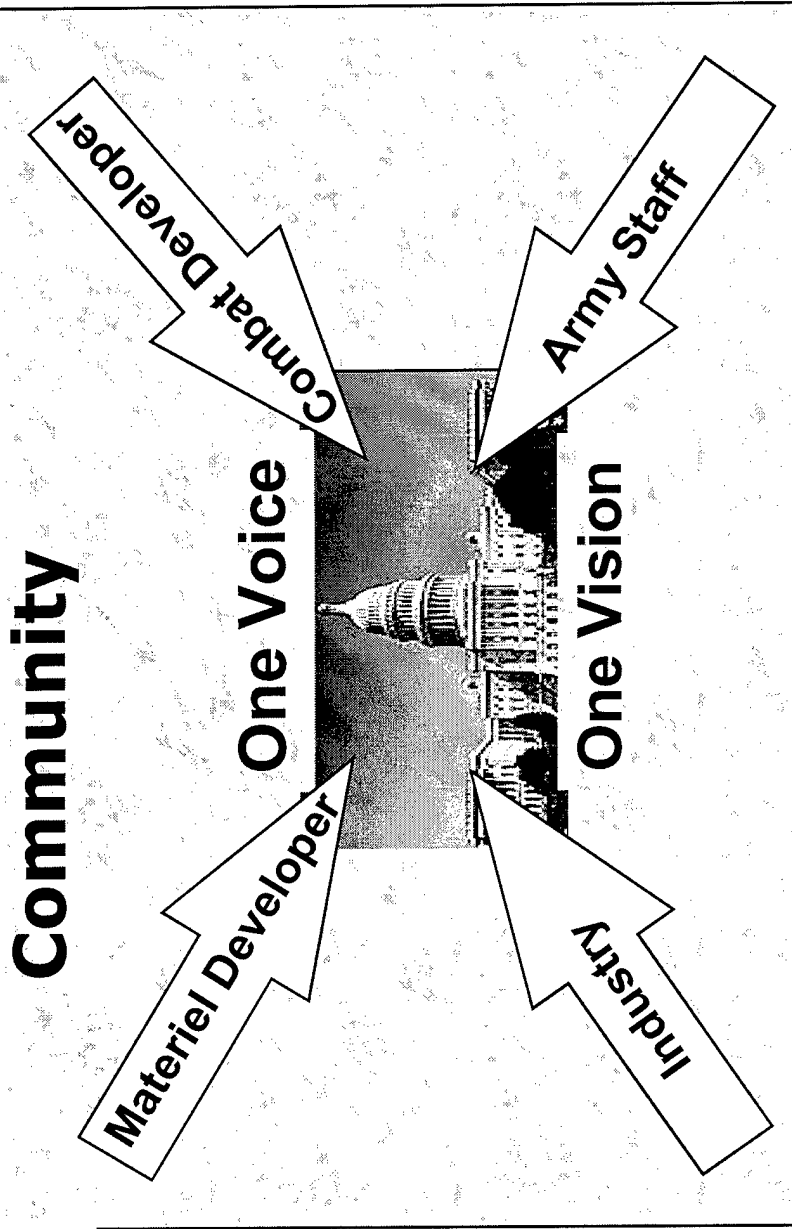
- Improve the communications between the Combat Developer and Materiel Developer.
- Achieve a stronger alliance with industry.
- Develop a team strategy to efficiently adopt commercial technology in the "Spiral Modernization" of our legacy fleets.
- Speak with one voice

*"We must indeed all hang together, or, most assuredly, we shall all hang separately."*

*--Benjamin Franklin's reply in response to a John Hancock remark that the revolutionaries should be unanimous in their action; made at the signing of the Declaration of Independence on July 4, 1776.*



## Army Tactical Wheeled Vehicle Community





# TACTICAL WITNESS SUSTAINMENT

Ready — Relevant — One Army, Building for the Future



S

- Problem - Meet War Time Mission
- Solution - Execute Program for Selected

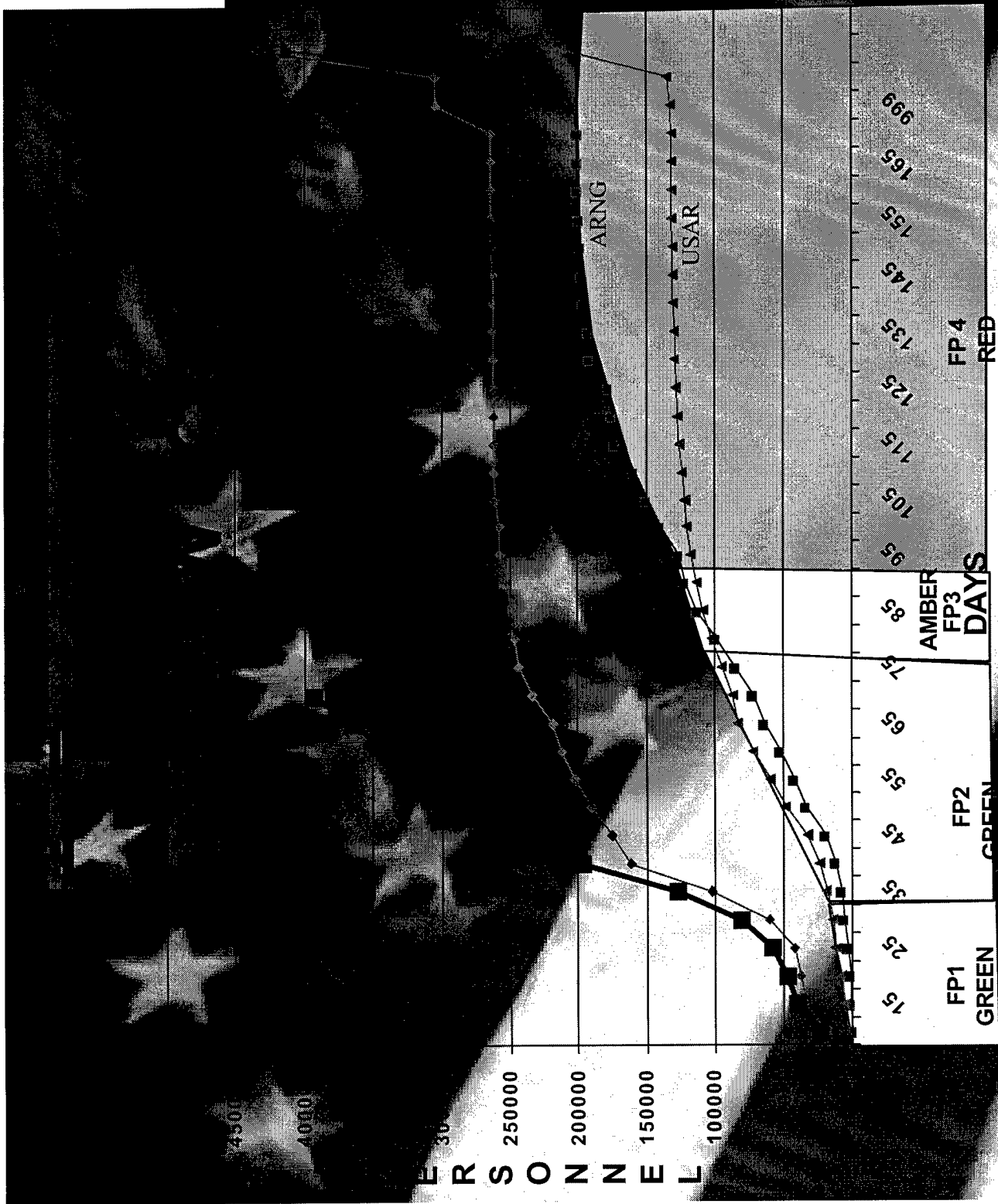
Ready — Relevant — One Army, Building for the Future



- Shortage of equipment exacerbated by the AC
- Equipment is Precipitously Cascaded
- Cascaded Vehicles Received by the AC

Equipment is Stretched Over the Next

Ready — Relevant — One Army, Building for the Future



Ready — Relevant — One Army, Building for the Future



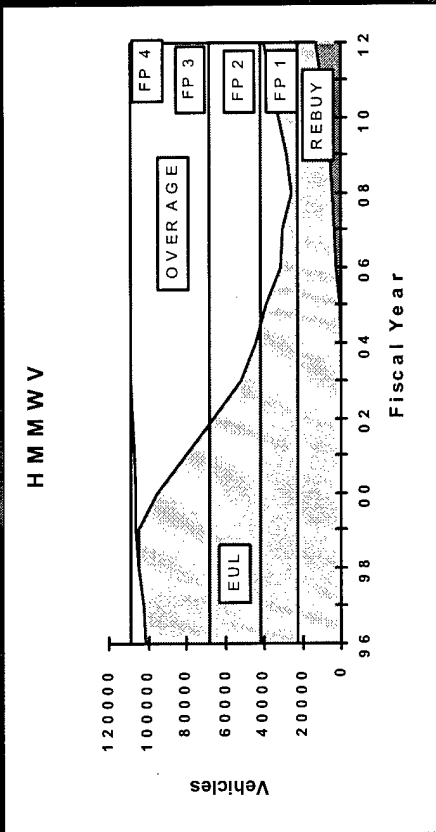
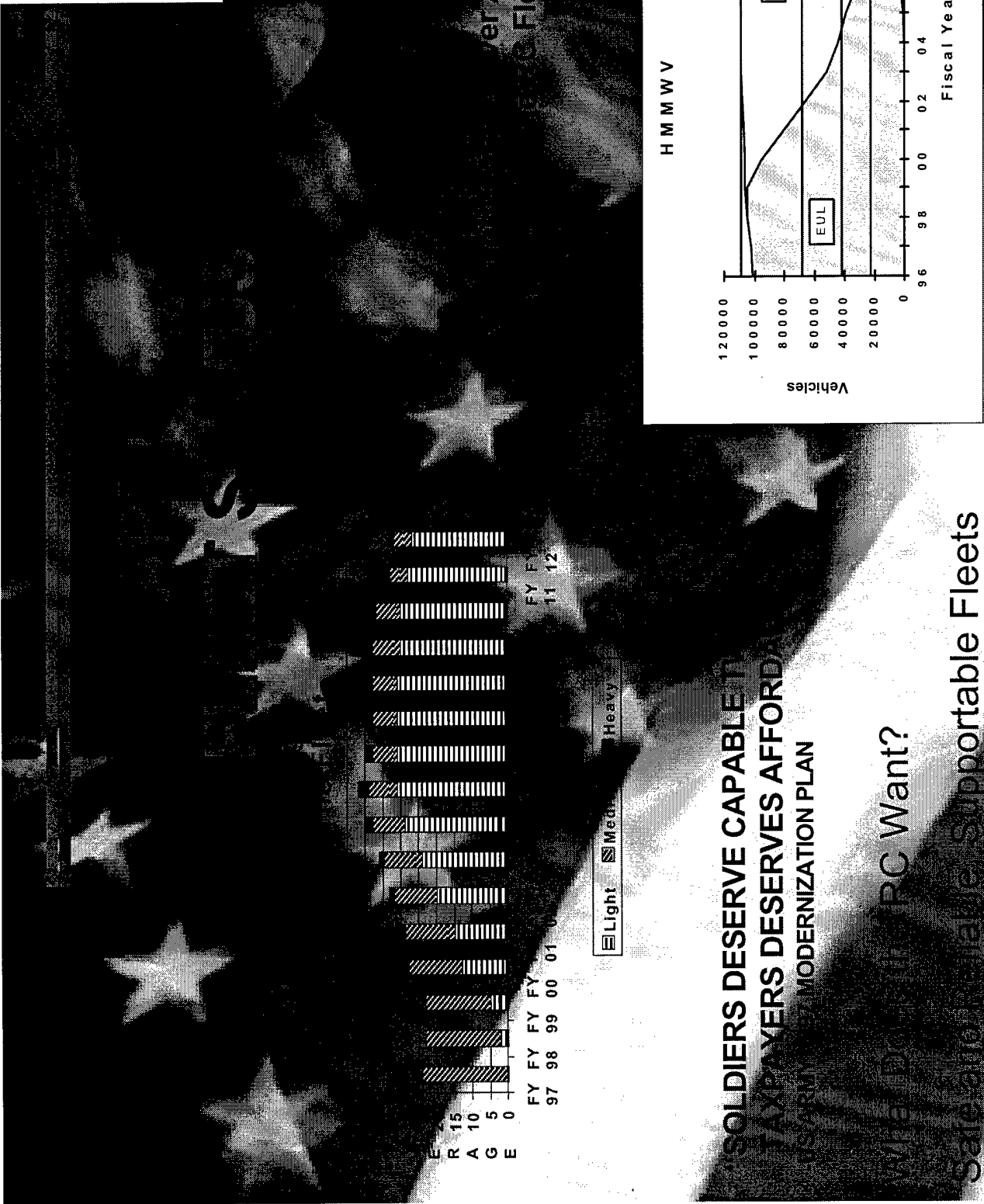
# RC EQUIPMENT

RQD

AR  
USAR  
TOTAL

FP1	11,022	3,520		
FP2	28,344	9,052		
FP3	50,389	16,092		
FP4	7,712	21,624	24,894	3,703
				16,630

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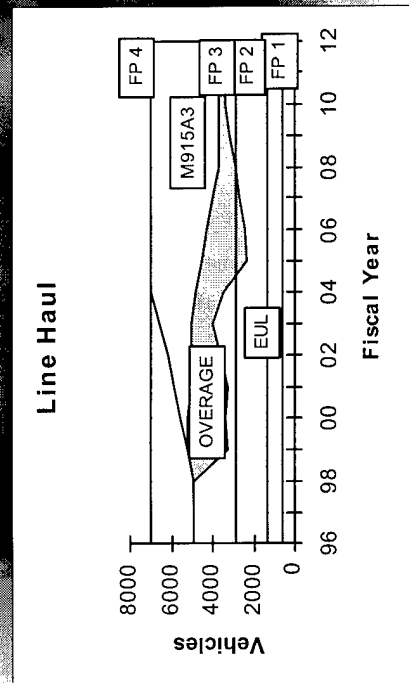
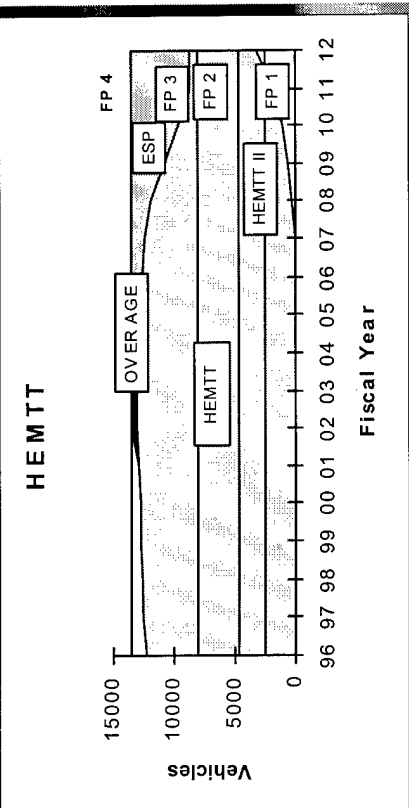
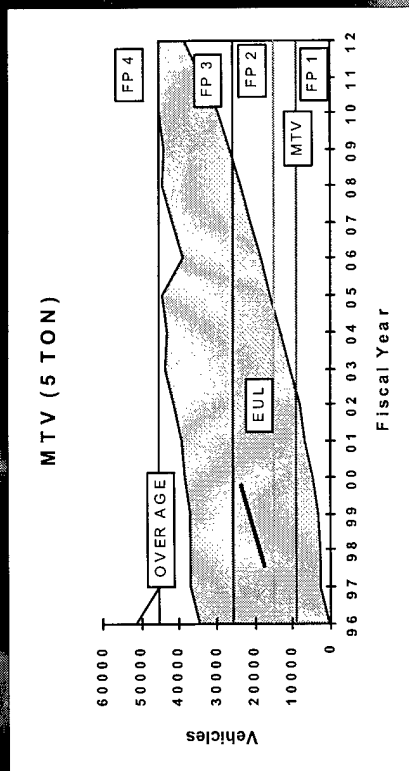


# Do You Want?

# Safety. Reliability. Supportable Fleets.

## Ready — Relevant — One Army, Building for the Future





Ready — Relevant — One Army, Building for the Future



- HEMTT II Production For Over Match
- HMMWV Procurement

- FMTV Fielding Continues Throughout
- Remanufacture Of HMMWV, HEMTT
- Trailer Procurement
- Line Haul Procurement & Remanufacture
- HETS Procurement
- PLS
- HEMTT-LHS

## **“SOLDIERS DESERVE CAPABLE TWV, AND TAXPAYERS DESERVES AFFORDABILITY”**

ARMY 1997 MODERNIZATION PLAN

**Ready — Relevant — One Army, Building for the Future**



# RC RATING

## LIGHT FLEET

GREEN

ASSETS MEET  
REQUIREMENTS  
NOT OVER AGE

AMBER

FP 1 & 2 OK  
OVERAGE

AMBER

FP 1 & 2 OK  
OVERAGE

Total

RC RATING

FP

1 & 2 OK  
2, 3 & 4

GREEN - Adequate  
Required Operational

- Limited  
Required Operational

RED - Required Operational Capability does not Exist or  
Capability is Insufficient to Defeat the Threat or Provide the  
Required Support  
Capability is Based on Vehicles not Having Exceeded their Useful

Ready — Relevant — One Army, Building for the Future



T

## MEDIUM FLEET

AMBER

FP 1&2 OK  
OVERAGE

AMBER

OVERAGE

GREEN

GOOD FILL ALL FP

TOTAL FOR

RC 2 1/2 Ton Fleet

FP 1-4  
FP 3 & 4

2, 3 AM

RC 5 Ton Fleet

FP 1-4 GREEN

GREEN - Adequate  
the Required Operational Capability

- Limited Capability  
Required Operational Capability

RED - Required Operational Capability Does not Exist or  
Capability is Insufficient to Defeat the Threat or Provide the  
Required Support.

Capability is Based on Vehicles not Having Exceeded their USL

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T

## HEAVY FLEET - TACTICAL DESIGN

FAR-TERM

GREEN

GREEN

GREEN

## HEAVY FLEET - COMMERCIAL DESIGN

FAR-TERM

NEAR-TERM  
FY 99-05

GREEN

GREEN

GREEN

AC & RC Heavy Fleets status are the same

Capability is Based on Vehicles not Having Exceeded their USL

Ready — Relevant — One Army, Building for the Future



THOUGH THE  
ATTITUDE  
S A  
COST  
ARE  
PROCURE  
DUE TO INSUFFICIENT

Ready — Relevant — One Army, Building for the Future





# ACER

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image

Hydraulic Systems

Trailer Decks

Brake Systems

Drive Train

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S

# ARMY NATIONAL GUARD

At Some Point, Tactical Readiness is a Requirement for the Army National Guard

At Some Point, Tactical Readiness is a Requirement for the Army National Guard

At Some Point, Tactical Readiness is a Requirement for the Army National Guard

- Previous
- No Depot Level Task
- At Some Point, Tactical Readiness is a Requirement for the Army National Guard

Ready — Relevant — One Army, Building for the Future





# TRUCKS AND DEFENSE

## TRUCKS AND DEFENSE

Trucks are a critical part of the Army's logistics and support structure. As the Army modernizes its fleet, it is essential to ensure that the trucks are capable of meeting the demands of the future.

Trucks are a critical part of the Army's logistics and support structure. As the Army modernizes its fleet, it is essential to ensure that the trucks are capable of meeting the demands of the future.

- On Defense, the Army's fleet of trucks is a critical part of the logistics and support structure. As the Army modernizes its fleet, it is essential to ensure that the trucks are capable of meeting the demands of the future.
- Labor Hours and Costs are a major concern for the Army. The Army is looking for ways to reduce labor hours and costs while maintaining the quality of the fleet.
- BLTM-TRM Model is a new model for the Army. It is a more efficient and cost-effective way to manage the fleet.
- AC Deferred Maintenance is a program that allows the Army to defer maintenance on trucks. This helps to reduce the cost of the fleet and ensures that the trucks are ready for use when needed.

RO Fleet Age is Major Contributor to Fleet Costs. The Army is looking for ways to reduce the age of the fleet and the costs associated with it.

RETROEUR Program Mitigated Deferred Maintenance. The Army is looking for ways to reduce the cost of the fleet and ensure that the trucks are ready for use when needed.

Truck Sustainment Programs are Necessary to Maintain a Capable Fleet. The Army is looking for ways to reduce the cost of the fleet and ensure that the trucks are ready for use when needed.

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- No Formal Program For Getting Up to Date on Equipment  
→ Equipment Often Not Up to Date
- RC Imperative is to Fill Shortages  
→ Second Priority is to Modernize Equipment
- DPMO Often a Source of Equipment

Ready — Relevant — One Army, Building for the Future



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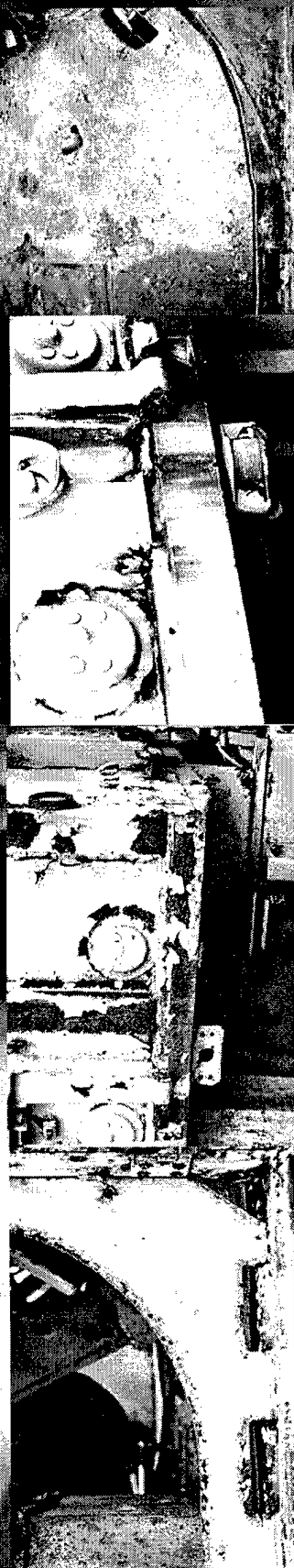


ARNG  
USAR

1 1

14

90-99



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## SE

- **Current Status**
  - **Organizational**
  - **Equipment**
  - **System/Method**
- **More Accurate**
  - **JCS Due Out**
- **FMC Status vs TM 10/20**
  - **Not Preferred Status**
  - **Doors, Bumpers, etc.**
  - **Not a Measure of Reliability & Sustained Operational**
  - **Obsolete/Excess Filling EOH Shortages**



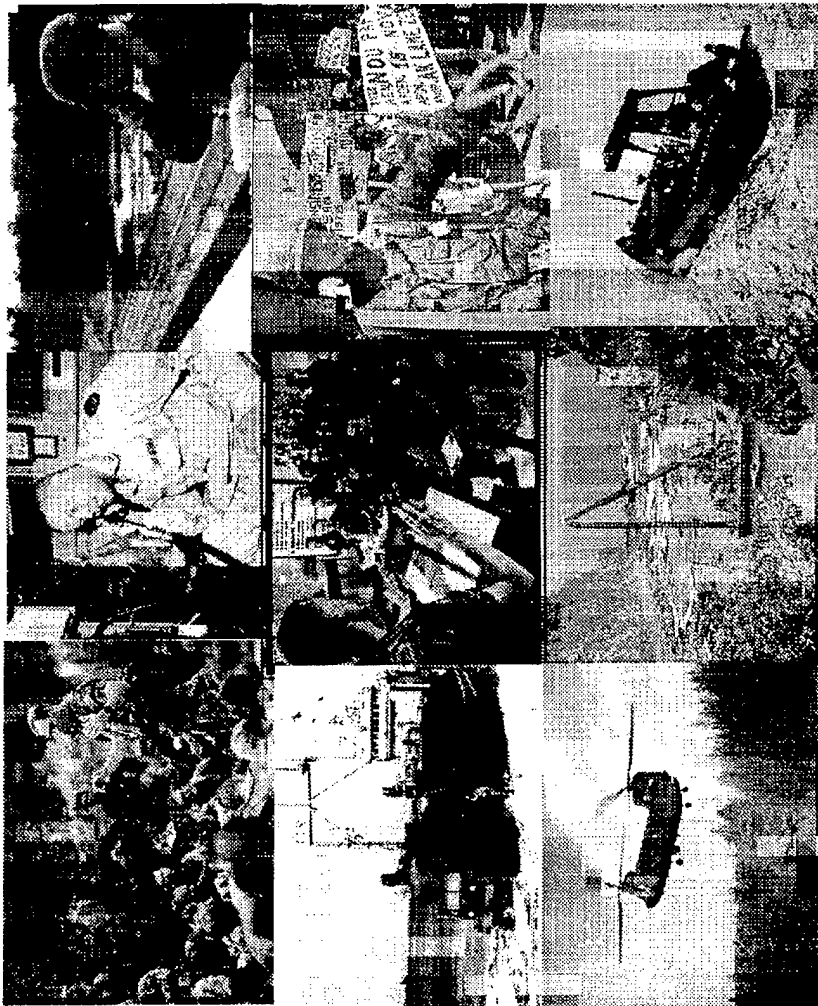
- Cascade equipment
- New Procurement
- No Other Sustainment Program





## State of the Army Reserve

### Briefing for the 1999 Tactical Wheeled Vehicles Conference



**BG James R. Helmly**

**Deputy Chief, Army Reserve**

*Ready — Relevant — One Army, Standing for the Future*

DAAR-LO



# **AGENDA**

- Today's USAR Environment
- Tactical Wheeled Vehicles Status
- Initiatives
- Summary

## Missions

- Provide trained and ready combat support  
/combat service support units to rapidly  
mobilize and deploy



### Trained and ready

- Combat service support/combat support
- 424 Force Support Package units
- 73% of the RC forces deployed for Bosnia

### Power projection

- Transportation Terminal Units
- Garrison support
- Installation medical support

### Training readiness enablers

- Initial Entry Training
- Lane training/battle simulations
- Skill training/professional education/ROTC

### Trained soldiers

- Joint Readiness Units
- Individual Mobilization Augmentee
- IRR mobilization pool



**FULL SPECTRUM  
CAPABILITIES**

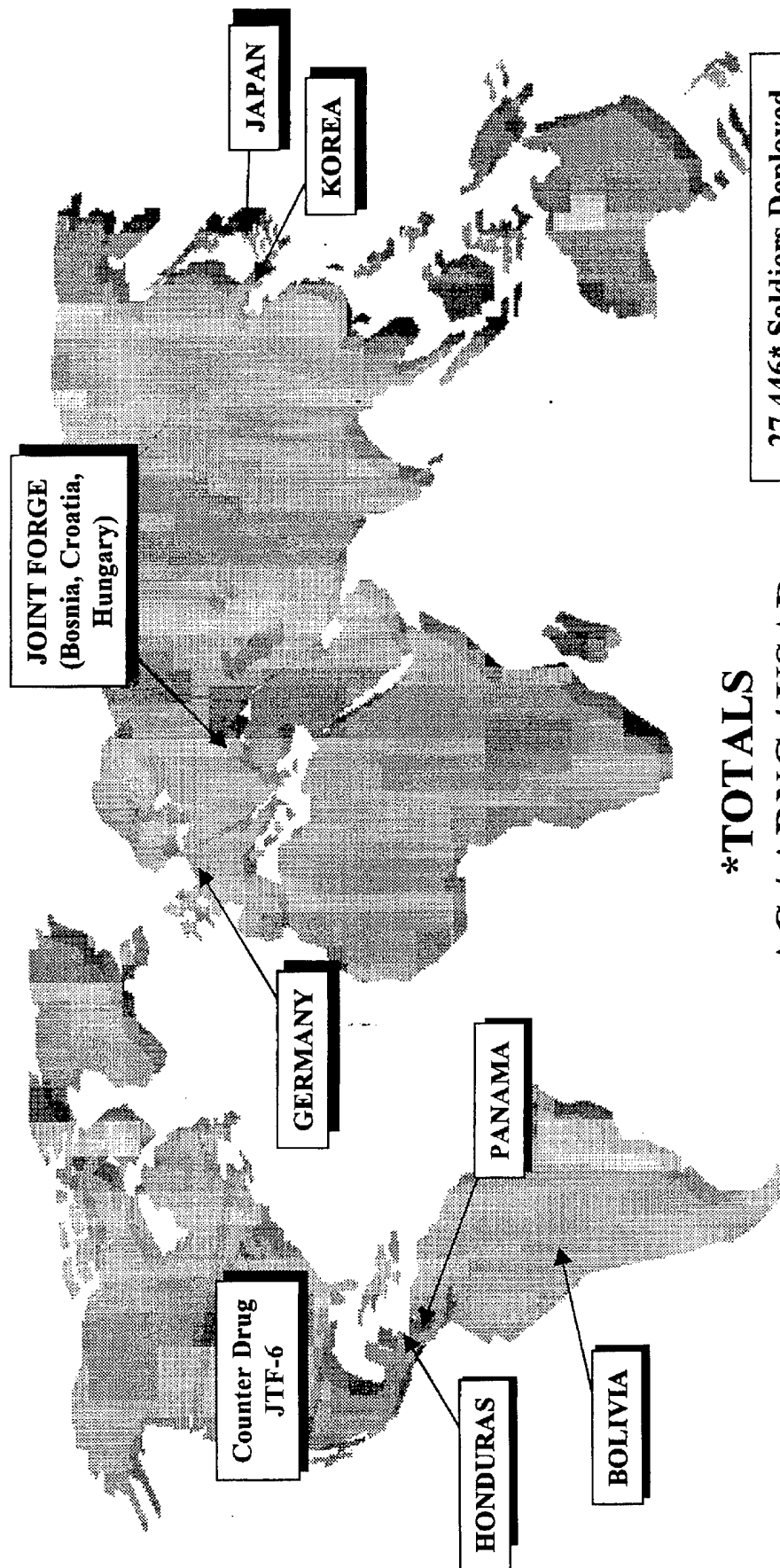
- Fully Engaged
- Ready, Relevant, Reliable
- Unique Capabilities
- Supporting the Nation & America's Army



**JOINT ENDEAVOR/JOINT GUARD**

**Forward Presence**  
**Peace Enforcement**  
**Humanitarian Support**  
**Domestic Support/Community Assistance**  
**Partnership for Peace**  
**Overseas Duty Training**

# Army Reserve OPTEMPO



## \*TOTALS

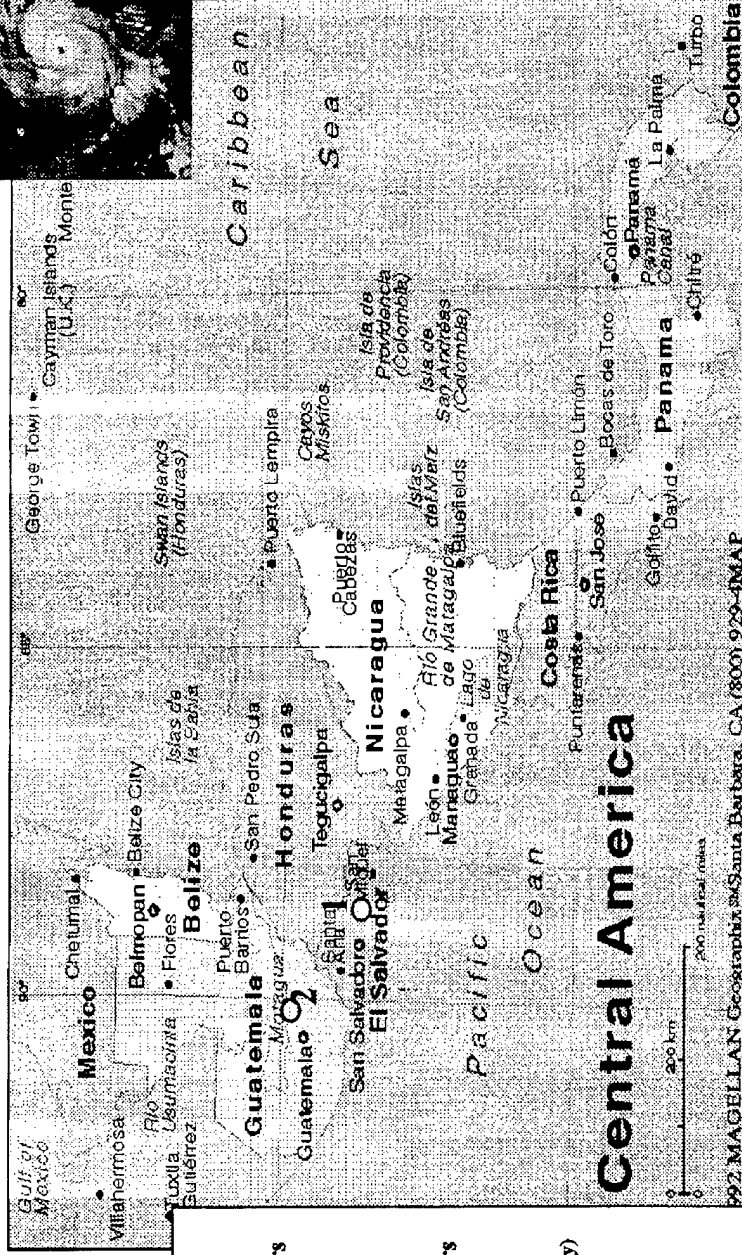
AC / ARNG / USAR

23,821 / 2,157 / 1,468

(As of 21 January 1999)

27,446\* Soldiers Deployed  
on CONOPS or Exercises in  
58 Countries.

## DISASTER RELIEF HURRICANE MITCH



### USAR TASK FORCES

#### 1 - GUATEMALA

(Approximately 1,500 soldiers from 21 units from March-August 1999)

#### 2 - EL SALVADOR

(Approximately 1,900 soldiers from 26 units from March-August 1999)

Engineer Battalions (Combat)(Heavy)  
Engineer Companies  
Combat Support Equipment  
Dump Truck  
Bridge  
Well Drilling  
Military Police Companies (Guard)  
AG Companies (Postal)  
Hospitals (Cbt)(Spt)  
Veterinary Detachments  
Field Services Companies  
Water Purification Teams  
Civil Affairs Teams  
Public Affairs Teams  
Signal Corps Teams  
Direct Support Maintenance Sections  
Direct Support Supply Companies  
Chaplain Teams

**MISSION:** Plan, organize, and deploy two Task Forces (El Salvador and Guatemala) in support of USCINCSO's disaster relief effort in Central America with a deployment window of 15 Mar 99 through 15 Aug 99.

## America's Army in Transition

FY 99 By Component (MTOE ONLY)

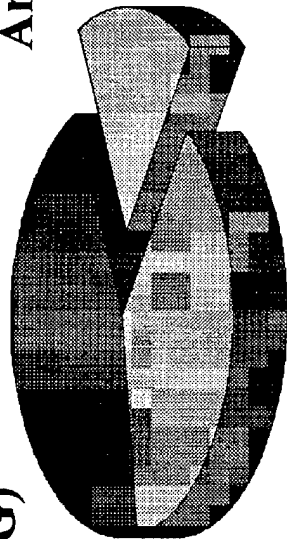
National Guard (NG)

45%

Active

Component (AC)

38%

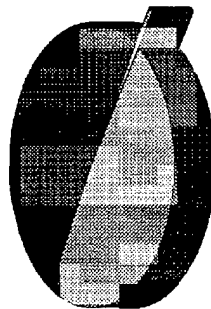


Army Reserve (USAR)

17%

\*Cbt

NG 56%

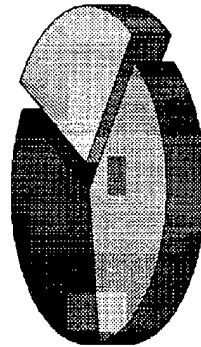


AC 43%

USAR 1%

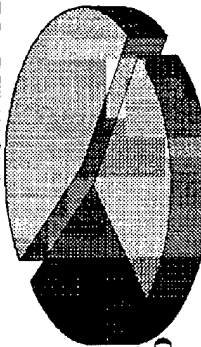
\*Cbt Spt

NG 36%



AC 38%

USAR 26%



AC 28%

USAR 45%

SOURCE: SAMAS, MF9812, FY99 LOCKED FORCE  
AS OF 27 JAN 99

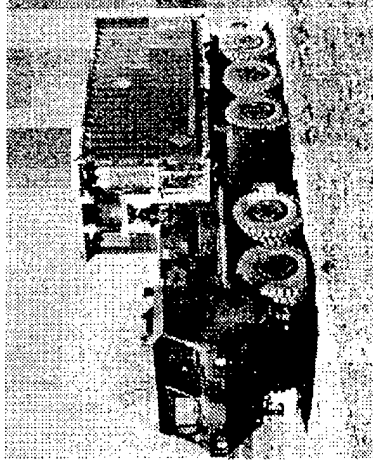
\*MTOE Units Totals Only

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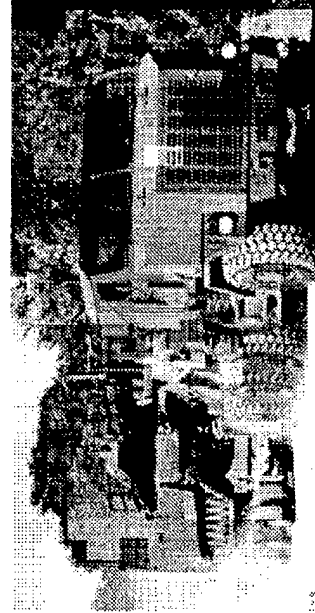
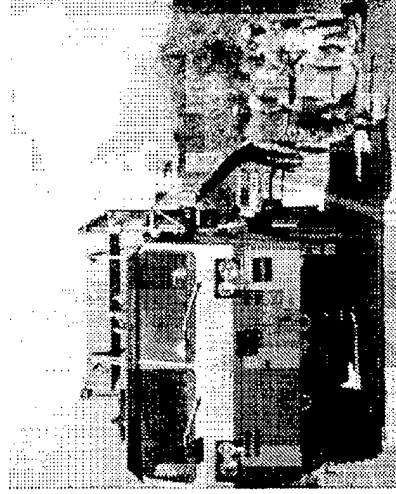
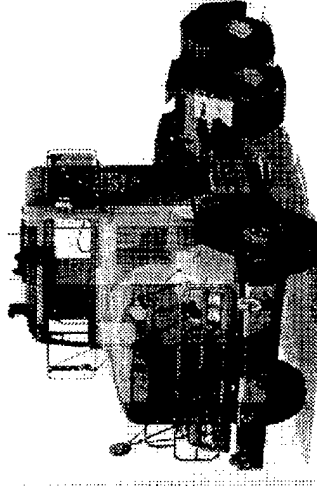
## America's Army's Battlefield Logisticians

- USAR Core Competencies**  
(percent of Total Army assets)
- Petroleum Supply Battalions - 92%
  - Railway Units - 100%
  - EPW Brigades - 100%
  - Chemical Battalions - 75%
  - Petroleum Groups - 50%
  - Medical Brigades - 85%
  - Transportation Groups - 80%
  - Water Supply Battalions - 100%
  - Motor Battalions - 78%
  - Civil Affairs units - 97%



**Common USAR Equipment**  
(Required Unit Equipment)

- HETs - 485
- HMMWVs - 10,143
- 5 Ton Trucks - 8,084
- 2 1/2 Ton Trucks - 4,676
- Line Haul Tractors - 2094
- Palletized Load Systems - 711
- HEMTT Wreckers - 339
- 20 Ton Dump Trucks - 456
- Tactical Firetrucks - 79
- HEMTT Common Bridge Trans - 284



**Mission Success Requires A Modernized, Well-Maintained,  
Tactical Wheeled Vehicle Fleet**

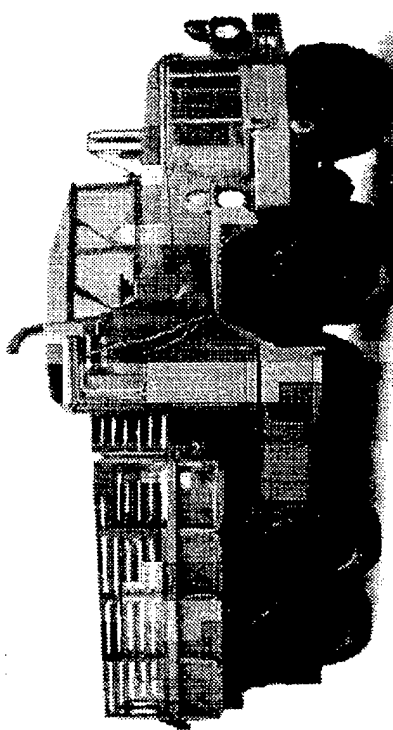
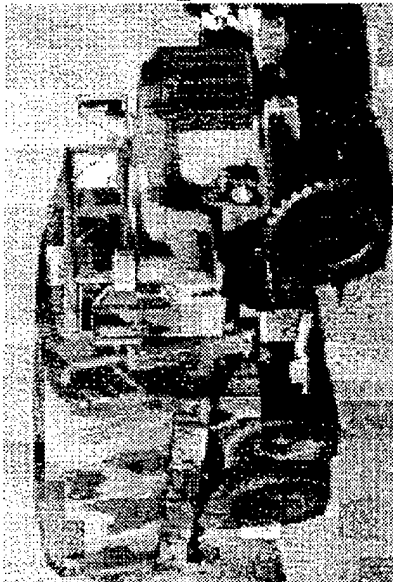
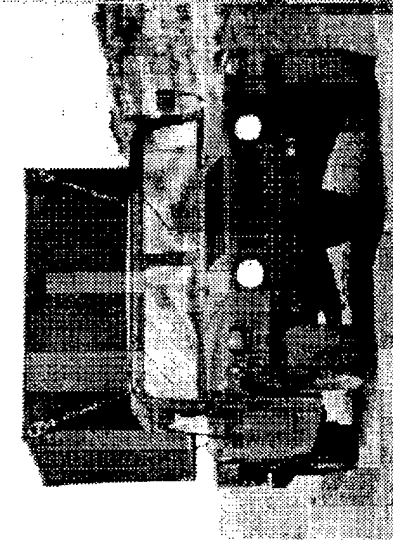
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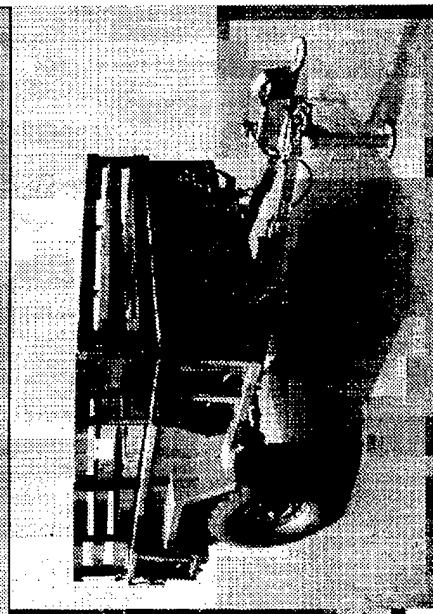
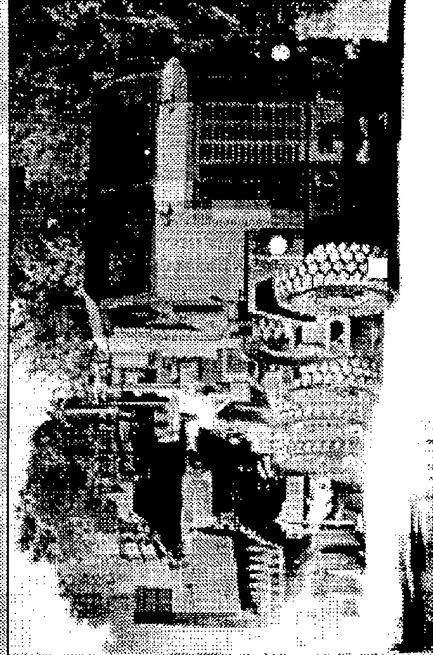
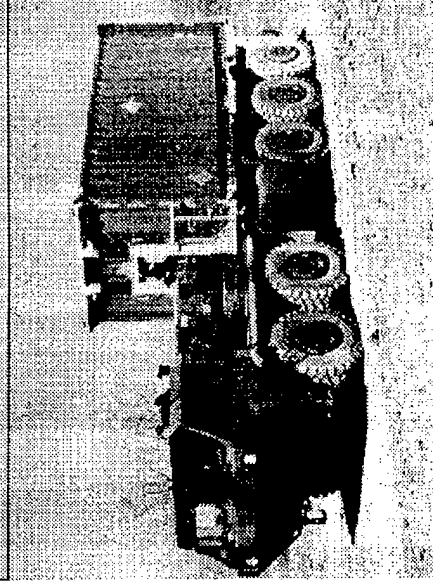


**U.S. ARMY  
RESERVE**

**1908 - 1998**  
**90 YEARS**  
**U.S. ARMY RESERVE**



# Army Reserve Tactical Wheeled Vehicles Status

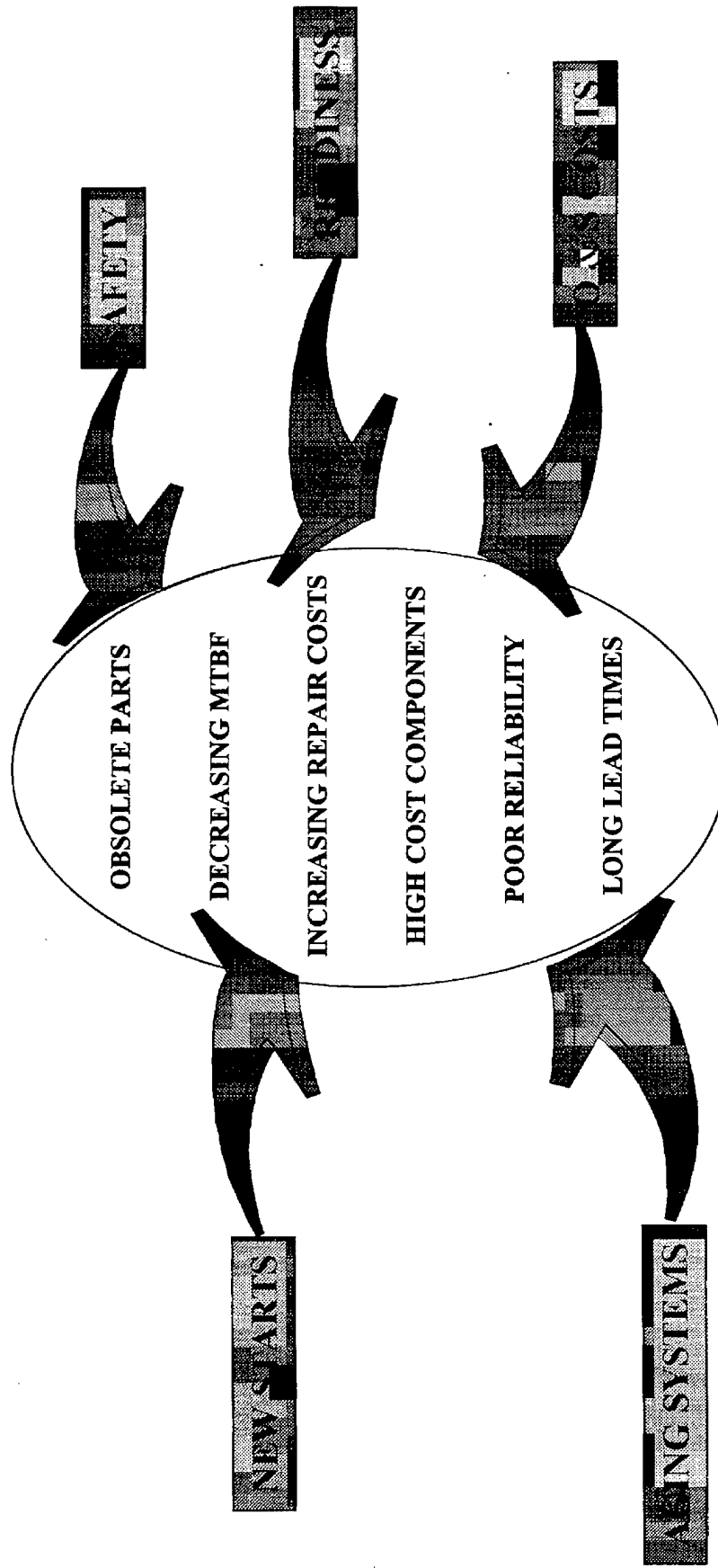


**Ready — Relevant — One Army, Building for the Future**

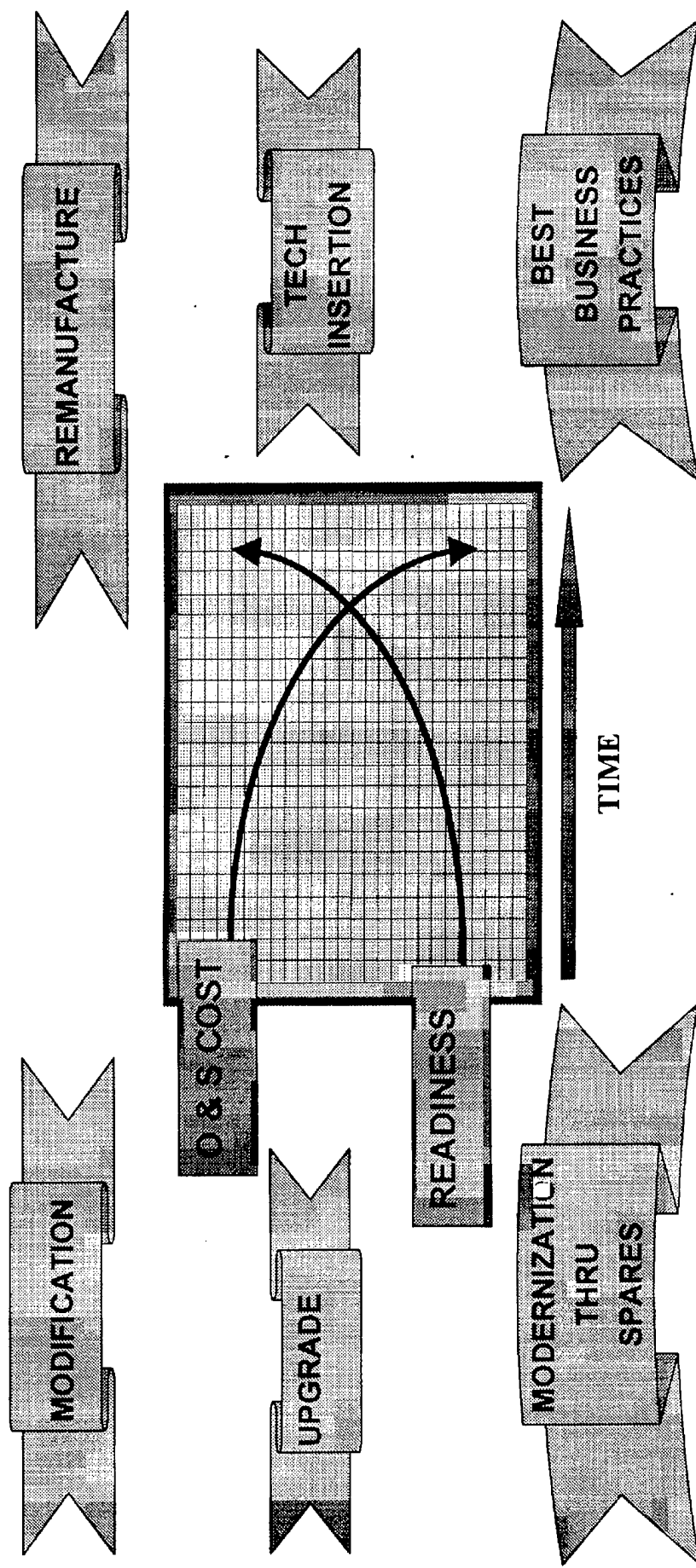
**DAAR-LO**



# USAR TRUCK FLEET SCENARIO



# USAR/INDUSTRY PARTNERSHIP SOLUTIONS



# ..... the Future Direction

## Partnering With The Truck Industry

- REMANUFACTURE
- TECH INSERTIONS
- PRODUCT IMPROVEMENTS
- REPAIR PARTS DISTRIBUTION
- MODERNIZATION THRU SPARES
- NEW BUYS
- PRODUCTION SURGE
- MULTI-USE/PURPOSE VEHICLES
- MILITARY ADAPTATION OF  
COMMERCIAL MODELS

USAR fielding strategy is tiered to field FP1&2 with new vehicles and remanufacturing the remaining vehicles for the lower tiers.

# SUSTAINMENT INITIATIVES



## HEMTT Common Bridge Transport (CBT):

	QTY	NEW COST	CONVERSION	COST SAVING
FY95	100	\$10,300,000	\$8,500,000	\$1,800,000
FY96	102	\$10,506,000	\$8,670,000	\$1,836,000
FY97	28	\$2,884,000	\$2,380,000	\$ 504,000
FY98	10	\$1,030,000	\$ 850,000	\$ 180,000
FY99	40	\$4,120,000	\$3,400,000	\$ 720,000

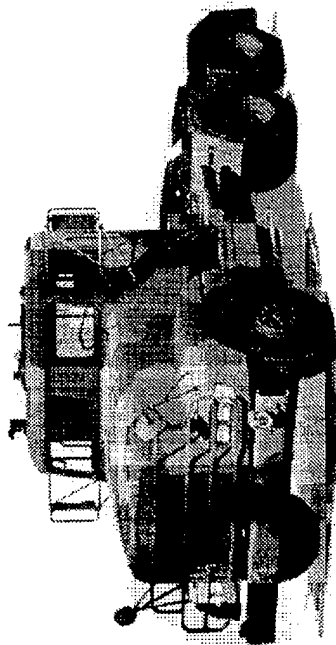
- Army Reserve Has Five MTOE Multi-Role Bridge Companies
- Combines Both Float and Fixed Bridging Into One Unit
- Will Be FSP 1 or 2
- Each Company Authorized 56 CBTs
- HEMTT CBT Is a Pacing Item.
- USAR Initiated a Program to Convert HEMTTs to the CBTs to Meet Requirement

**WORK TO BE COMPLETED AT VARIOUS SITES IN U.S. (OSHKOSH, WI)**

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**M915 TO M915A4:**



FY98	QTY	NEW COST	REFURB	COST SAVING
	2	\$ 234,000	\$ 169,000	\$ 65,000
FY99	60	\$7,020,000	\$5,070,000	\$1,950,000

**Tactical Wheeled Advanced Technology Demonstrator--Proven Performance:**

- Army Reserve Force XXI Contribution
- Showcased Potential Applications of Emerging Technologies
- Decreased Costly Vehicle Life Cycle Maintenance
- Enhanced Crew Performance and Safety
- Developed Smart Business Practices

**Safety Package**

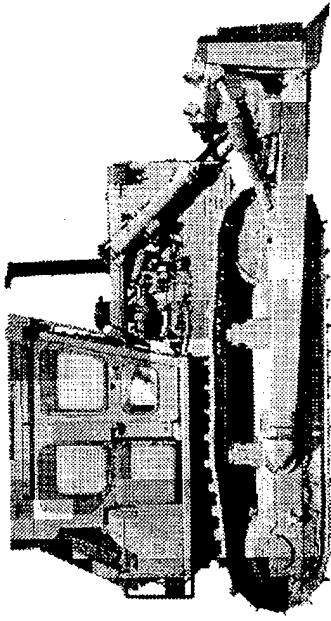
Electronic Stroke Alert  
Collision Avoidance System  
Heads-Up Display

**Efficiency Package**

Dial your Oil Change  
Never Lo Oil System  
Prelube Starter

**Enhancement Package**

Muffler Silencer  
Proheat System  
Rust Protectant



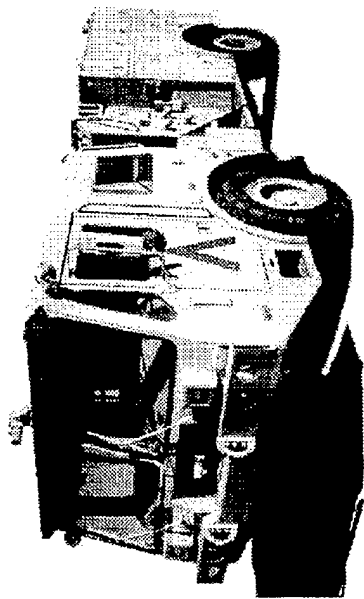
**D7F Dozers:**

	QTY	NEW COST	REFURB	COST SAVING
FY96	151	\$36,240,000	\$12,042,000	\$24,198,000
FY97	73	\$17,520,000	\$ 5,822,000	\$11,698,000
FY98	6	\$ 1,440,000	\$ 418,600	\$1,021,4000

- USARC Conducted Comprehensive Inspection and Analysis of the Total USAR D7F Fleet.
- TACOM/Partners in Industry Designed and Implemented a Total Rebuild Program.
  - Took Broken Down System, Refurbished It, Returned New System-With a New Warranty.
  - 230 of the USAR D7F Fleet Has Been Refurbished.

WORK TO BE COMPLETED AT VARIOUS CATERPILLAR SITES IN U.S. (IL, WI, AL, SC, IA, NY, MI, AK, PA, CA, FL, MA, VA, NM, KY, MD, AR, PR, OK, MN, CO)

# FUTURE INITIATIVES



## Fire Truck Assessment:

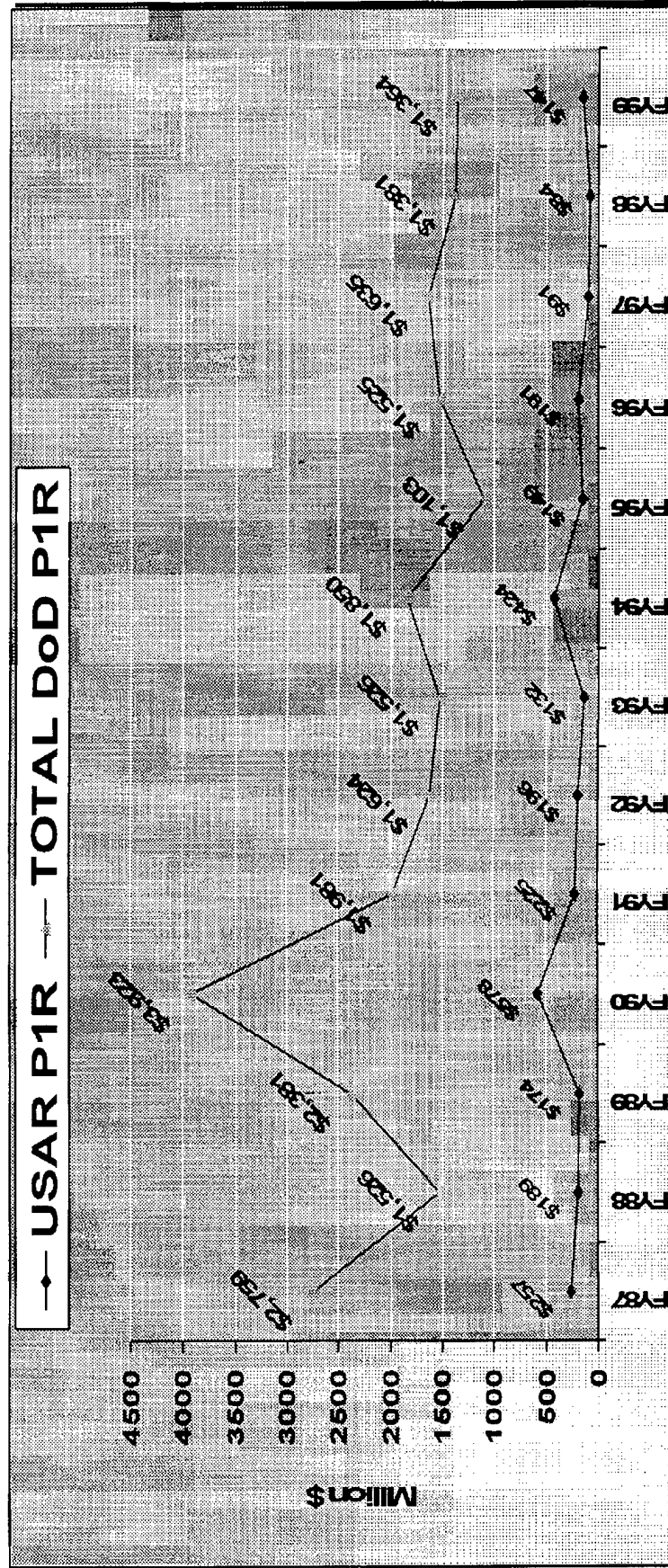
FY99	QTY	EST NEW COST	EST GLIDER COST*
	75	\$26,250,000	\$15,000,000

- Industry Partner Conducted Comprehensive Inspection and Analysis of the Current Army Reserve MAC I Fire Trucks.
- Objective to Identify and Document Any Major Safety or Operational Problems and Shortfalls.
- Visited 13 Sites, Major Manufacturers, and Interfaced With Users and TACOM.
- Recommendations Provided for Best Method of Overcoming the Problems and Shortfalls.
- Options Include IROAN Program, Glidering the Fire Trucks, Partial Upgrades, or Buying New Vehicles. Decision Pending.
- DA Prepared to Buy HEMTT Firetrucks for USAR.

\*Glidering Firetruck would require retaining the chassis and axles

# Reserve Components

## Procurement Exhibit (P-1R)

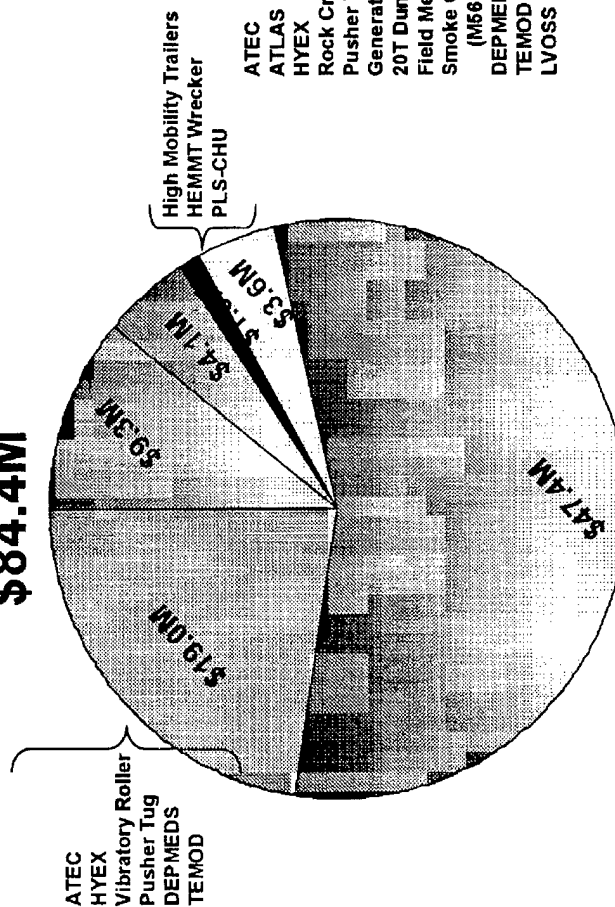


The Reserve Components Procurement Exhibit (P-1R) is a subset of the Department of Defense Procurement Programs (P-1) exhibit and reflects the Service estimate for those funds which will be used to procure equipment for the National Guard and Reserve. (Does not include NGREA or Congressional Adds.) The P-1R is only a snapshot of a point in time. Fiscal resources, programmatic, and priority changes may have revised data shown above.



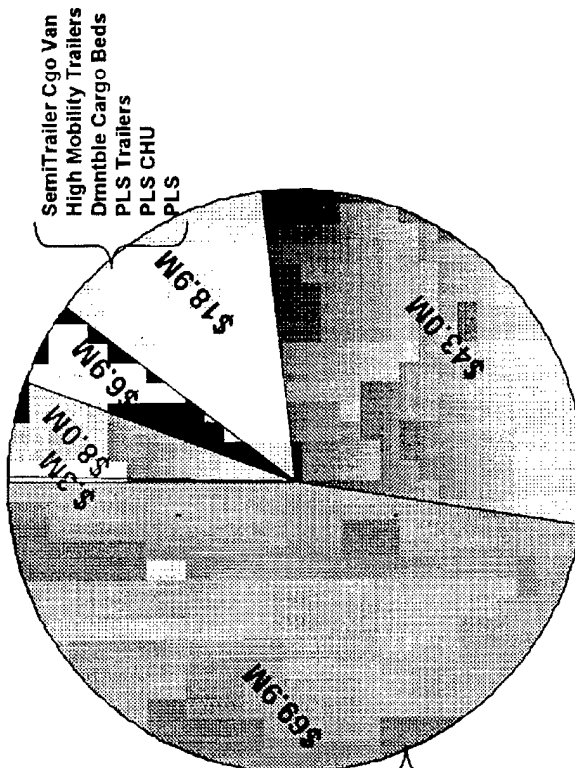
# PRESIDENT'S BUDGET P1R

**FY98 P1R  
\$84.4M**



- AIRCRAFT (11%)
- AMMUNITION (5%)
- WEAPONS/TRACKED CBT VEH (1%)
- TACTICAL WHEELED VEHICLES (4%)
- COMMUNICATIONS/ELECTRONICS (56%)
- OTHER SUPPORT EQPMNT (23%)

**FY99 P1R  
\$147.0M**



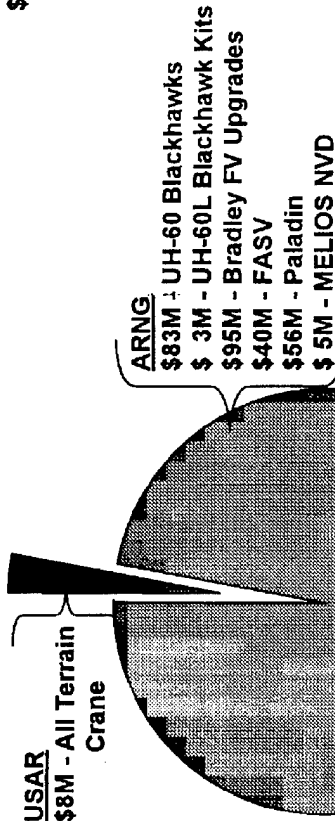
- AIRCRAFT (<1%)
- AMMUNITION (8%)
- WEAPONS/TRACKED CBT VEH (5%)
- TACTICAL WHEELED VEHICLES (13%)
- COMMUNICATIONS/ELECTRONICS (30%)
- OTHER SUPPORT EQPMNT (44%)

# CONGRESSIONAL ADDS

## FY98 Congressional

Adds

\$8.0M

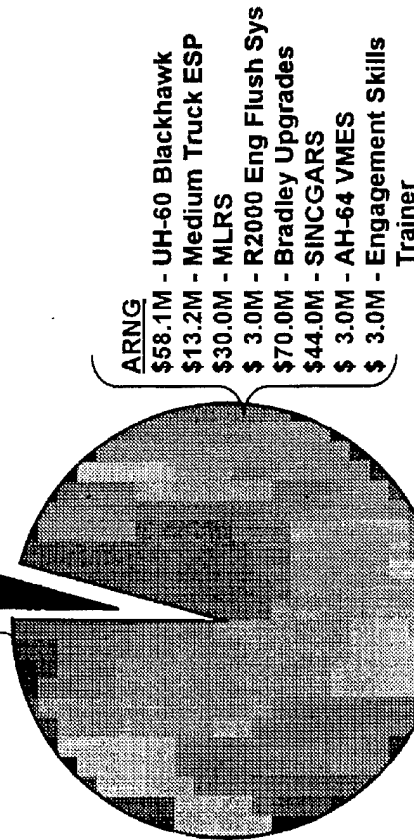
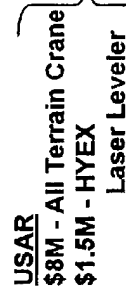


\$282.0M

## FY99 Congressional

Adds

\$9.5M

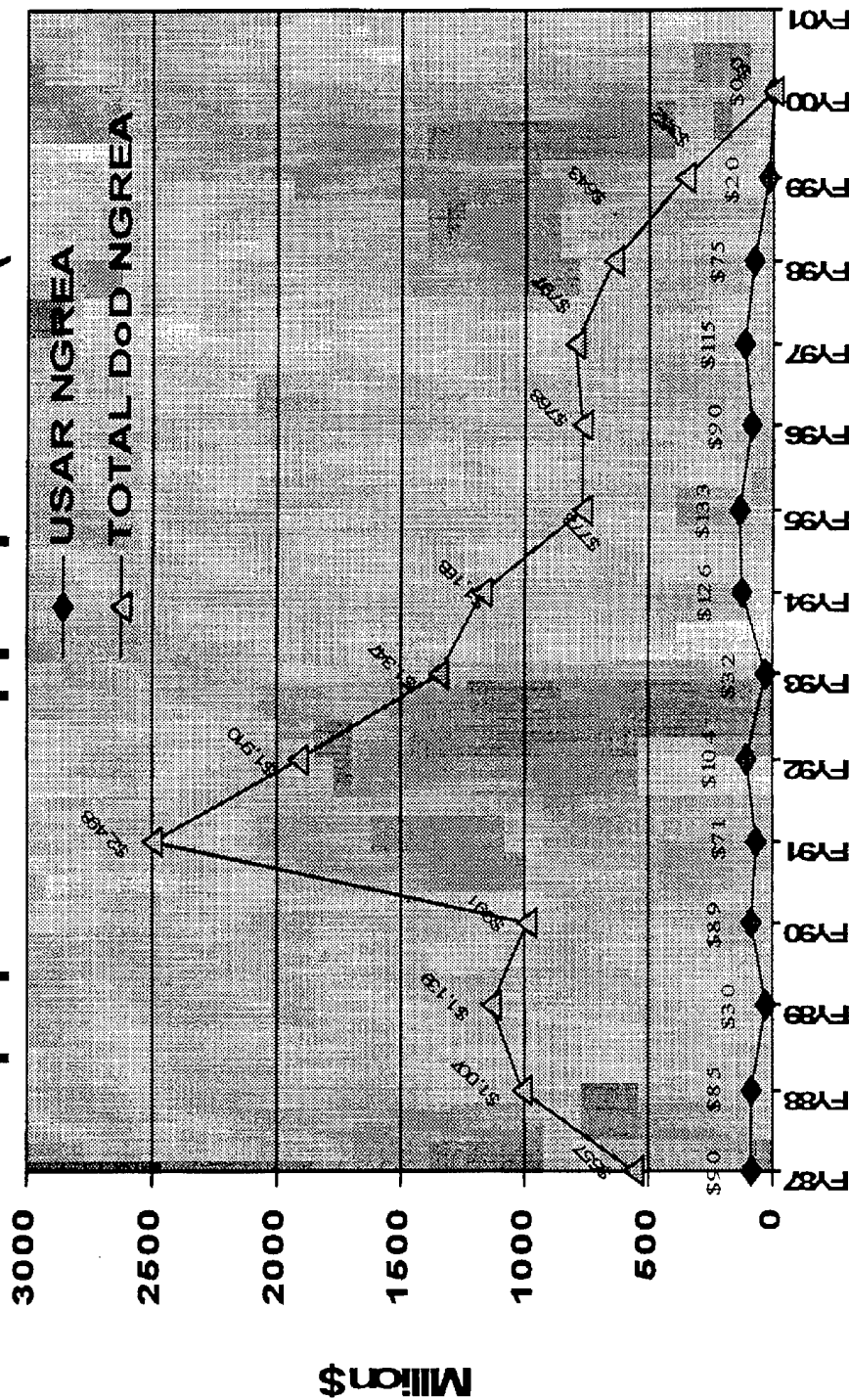


\$224.3M

CONGRESSIONAL ADDS ARE COMBAT ARMS AND COMBAT SUPPORT ORIENTED

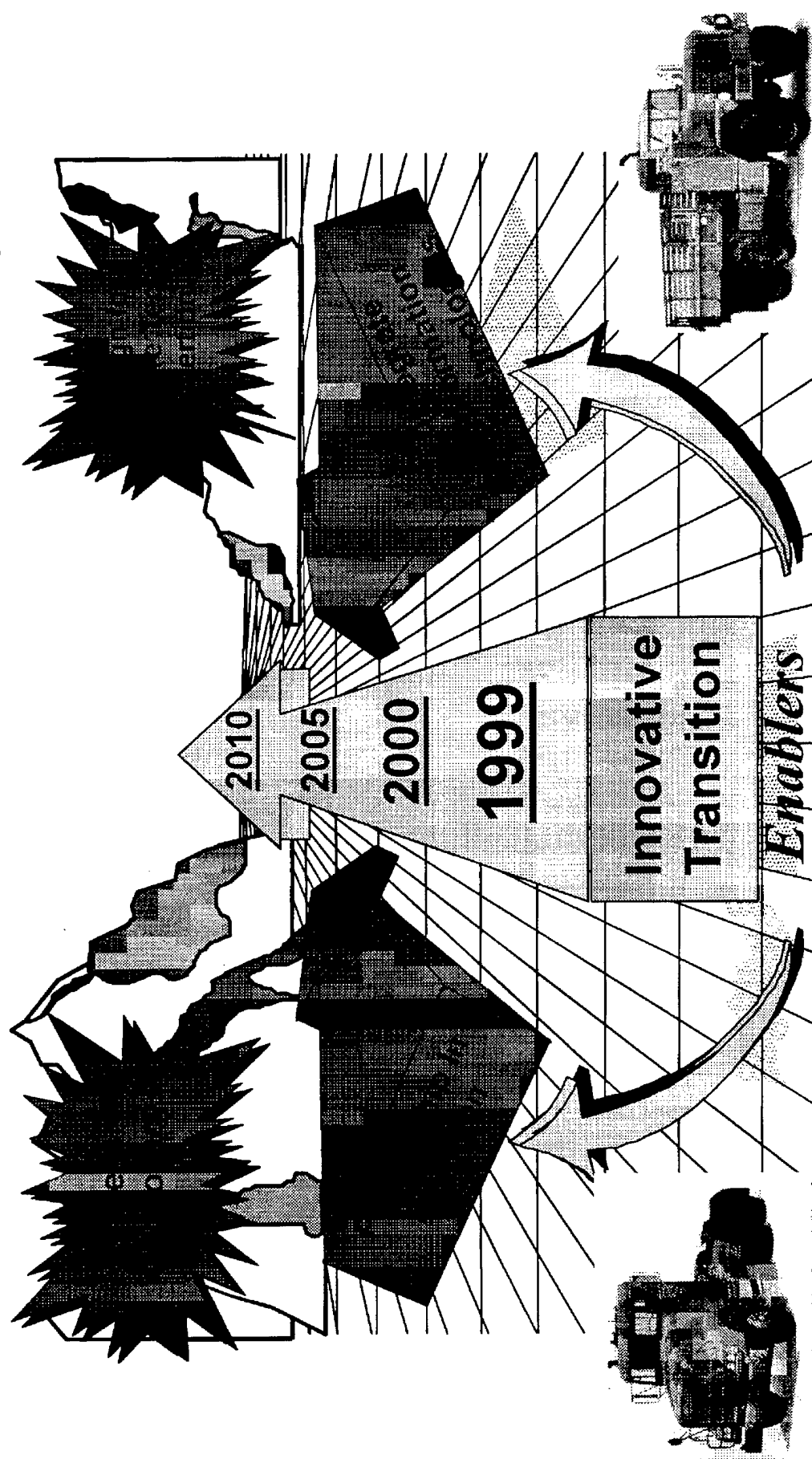


# National Guard & Reserve Equipment Appropriation (NGREA)



Long-term... DA to fund Reserve Component Equipment Procurement... NGREA reduces the flexibility needed to...

# What We Need From Industry

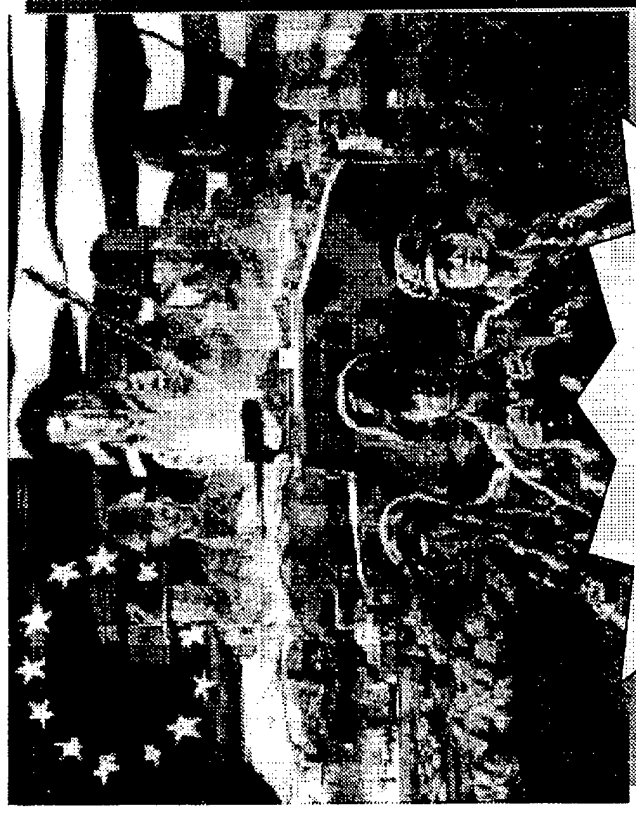


**The USAR's Future Is In Partnership With Industry**

*Ready — Relevant — One Army, Building for the Future*

**DAAR-LO**

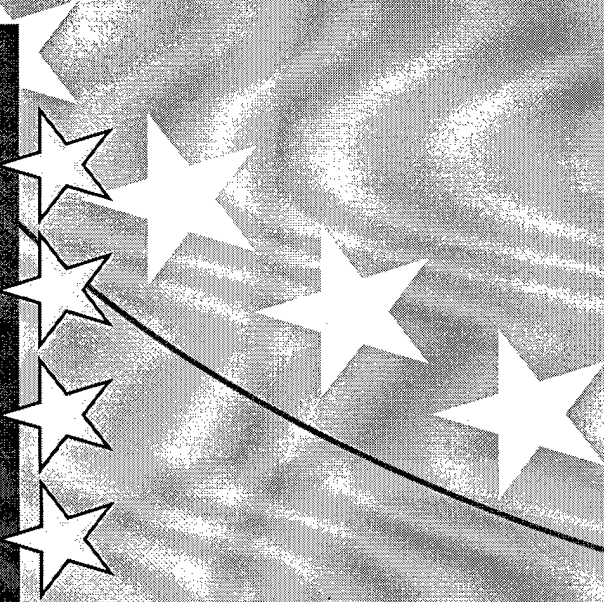
*A value-added leader  
in America's Army  
and the Nation ...  
... trained, ready, and  
relevant ... enabling  
the Army in peace  
and war to achieve  
total victory.*



*"Mission first,  
soldiers always"*



**GEN Wilson**



# ARMY MATERIEL COMMAND



**Tactical Wheeled  
Vehicle Conference**

**1 February 1999**

*Relevant, Responsive & Ready!*



# The Army's Materiel Command



Strategic Intent: "To Be the Army's Materiel Command...  
Relevant, Responsive, and Ready!"



## The Army Vision

The World's Best Army, a full spectrum force – trained and ready for victory. A Total Force of quality soldiers and civilians.

- ✓ A values-based organization
- ✓ An integral part of the Joint Team
- ✓ Equipped with the most modern weapons and equipment the Country can provide
- ✓ Able to respond to our Nation's needs
- ✓ Changing to meet the challenges of today...tomorrow...and the 21st Century

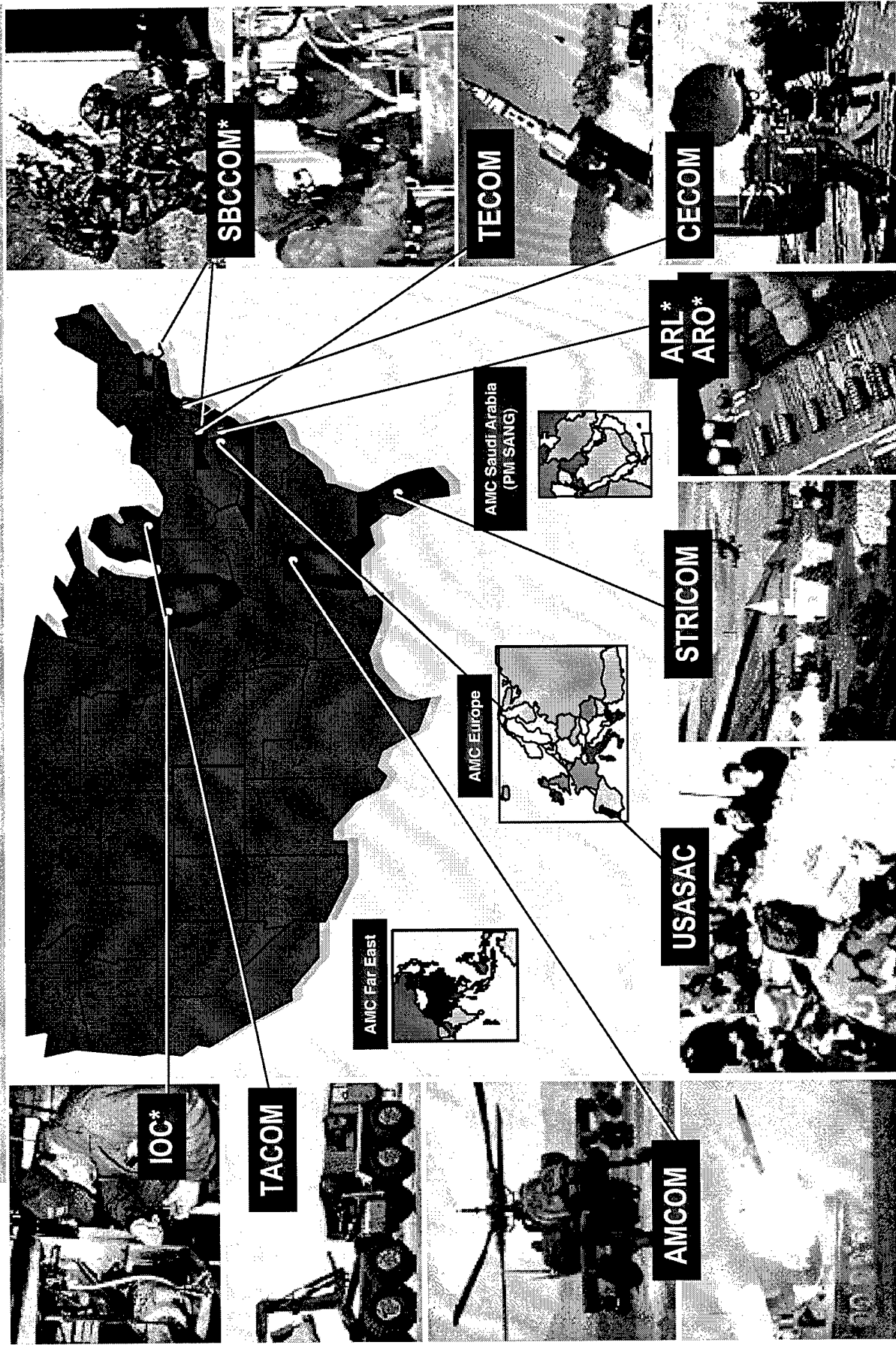
*"Soldiers Are Our Credentials"*

## The AMC Vision

"The Leader in equipping and sustaining America's Army through superior technology and responsive support assuring worldwide power projection and decisive victory."

*"America's Arsenal for the Brave"*

# America's Arsenal For The Brave



\* Major Restructure on 1 October 98





# AMC Business Includes

**Ammunition  
Wholesale Stockpile**  
Total: 3.2 Million Tons

\$22.4B Conv Ammo  
\$10.8B Missiles  
\$33.2B Total

**FY98\*  
Expenditures  
\$19.5 Billion**

\$8.0B Direct  
\$11.5B Reimbursable  
from

**Non-AMC  
Customers/EMS**  
\*Awaiting Final FY98 Figures

**Research, Development,  
& Acquisition**

17 AMC R&D Labs  
9 Test Centers/Ranges  
120+ College/Universities  
74% of Army S&T Funds  
40% of Army RDA Funds  
148 Patents  
371 ACAT I-IV Programs



**People**  
58,158 Civilians  
2,714 Military

200,000+ Family  
Members

**Depot  
Maintenance**  
\$1.7 Billion FY98

**Inventories  
\$7.27 Billion**  
(Wholesale Secondary Items)

**Requisitions  
Processed**  
1.2 Million Army  
6.8 Million DLA  
(Secondary Items)  
\$3.4B Sales \$1.2B Credits

**Contracting (FY98)**  
>24K Actions (>\$25K each)  
82% Productivity (Qty)  
47% Productivity (\$\$)

**Outsourcing Trend (FY98)**  
Depot Maintenance 35%  
Tech Base 67%  
BASOPs 28%

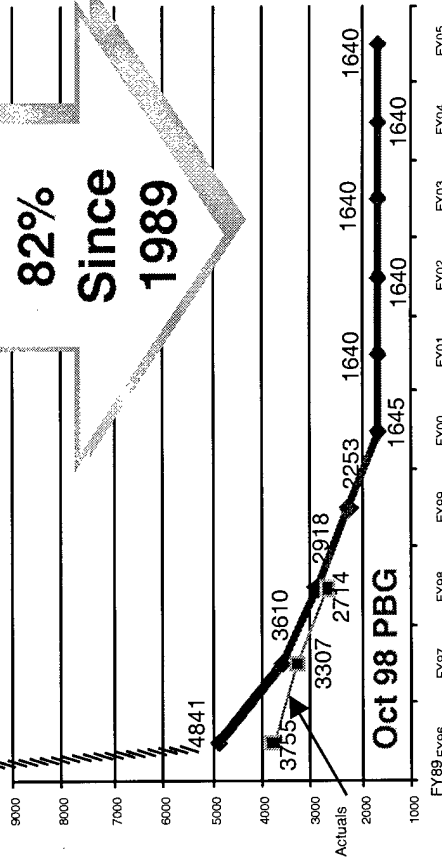


# AMC's Manpower Targets

## Military

8,937

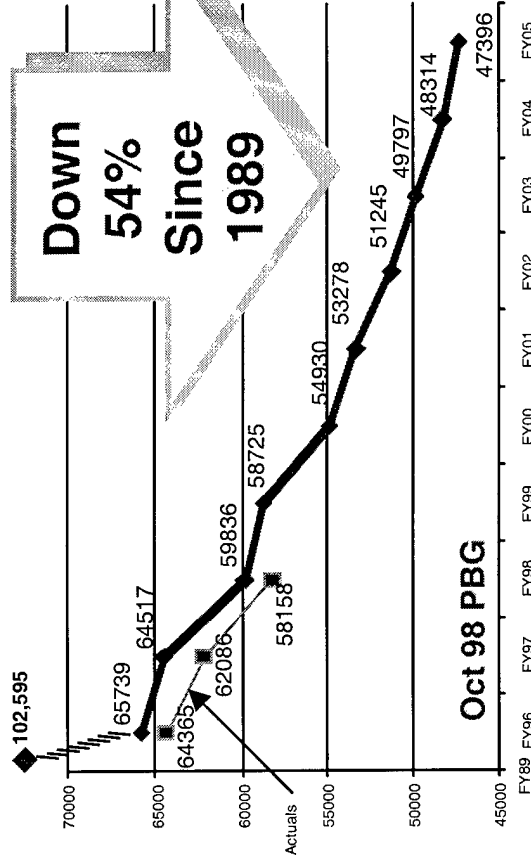
Down  
82%  
Since  
1989



Oct 98 PBG

## Civilian

Down  
54%  
Since  
1989



Oct 98 PBG

## Current Program Budget

### Guidance Calls for:

- Eliminating 1,074 (or 39.5%) of Soldiers Between End FY98 and FY01
- Eliminating 10,762 (or 18.5%) of AMC Civilian Workforce Between End FY98 and FY05

### Retirement Eligible:

1989: 15%  
2004: 50%

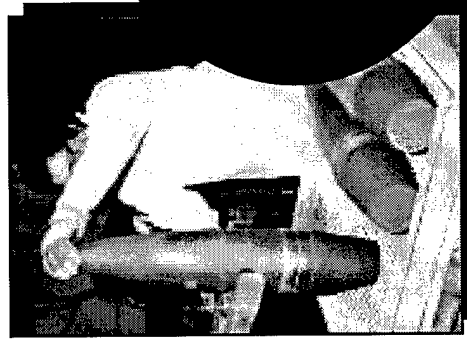
Average Age of AMC Workforce:  
1989: 42.1  
Today: 47.0



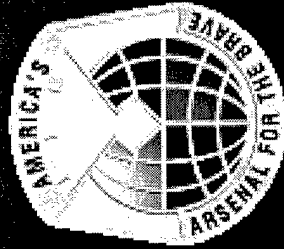
# AMC Today – And Into the Future – Means...



**Logistics Power  
Projection**



**Acquisition  
Excellence**



**Technology  
Generation/  
Application**

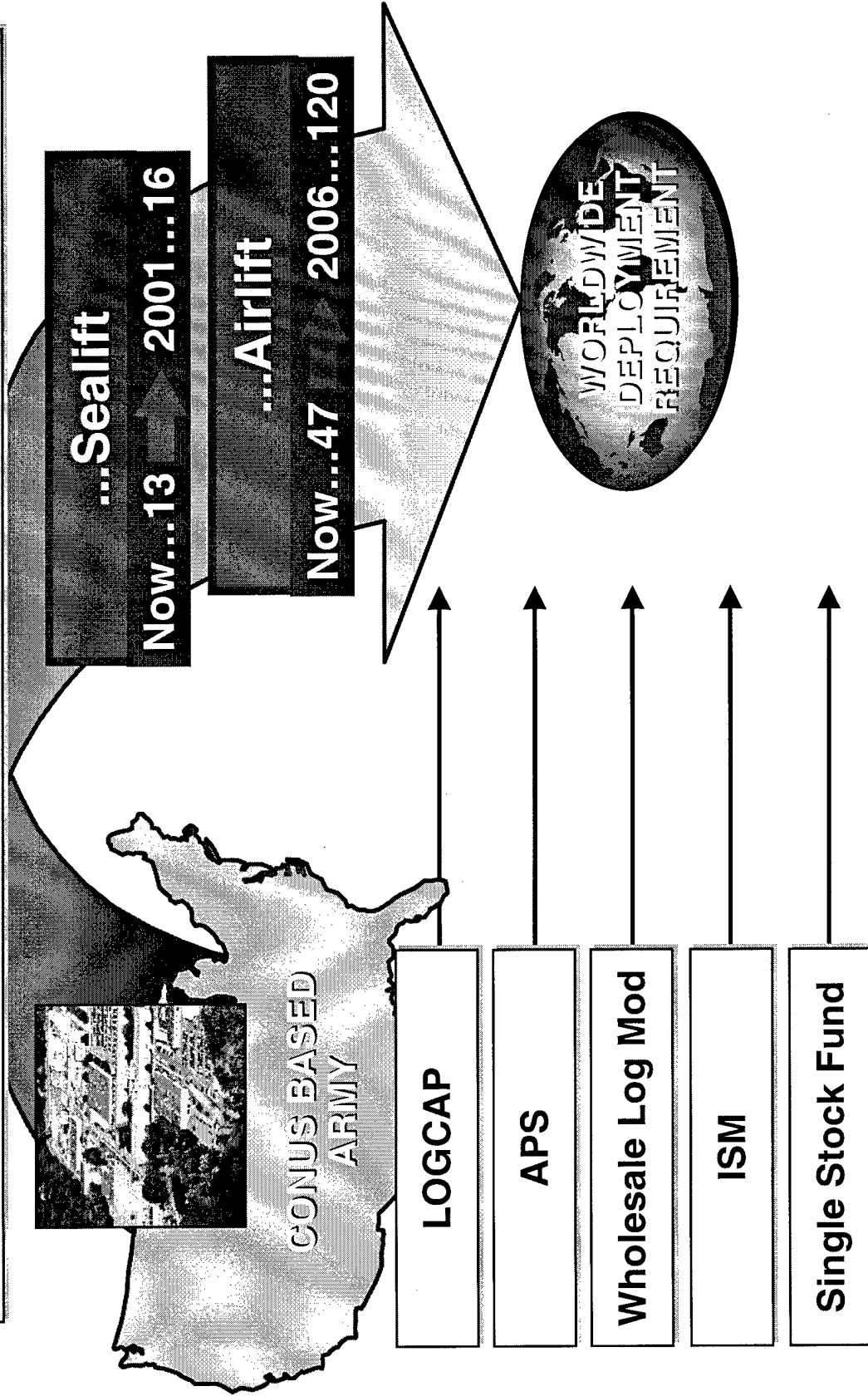
***Information Technology***  
**- A Key Enabler -**

**Generate Warfighting Capability...One-of-a-Kind Integrator...Capital Asset**



# Logistics Power Projection

*Shifting Focus from Stockpiles in Theater to Power  
Projection of Mobil Stocks*





# Army Prepositioned Stocks (APS) - Geographical

OP Project Stocks  
Sustainment Stocks  
Norway:  
155 SP FA Battalion  
Sustainment Stocks

## Stocks (APS)

### Sustainment Stocks

(DPG Based)  
\$6.9B Required  
-\$2.1B in Offsets

### APS CONU

#### APS-5 SW ASIA

Kuwait: 2X1 Brigade  
Sustainment Stocks  
OP Project Stocks  
ITT Corp  
Qatar: 2X1 Brigade  
Sustainment Stocks  
LSI Corp

#### APS-4 PACIFIC

Korea: 2X1 Brigade  
OP Project Stocks  
Sustainment Stocks  
Japan: OP Project Stocks  
Sustainment Stocks

#### APS-3 AFLOAT

Afloat: 2X2 Brigade  
OP Project Stocks  
Sustainment Stocks  
Dyncorp-  
Maintenance Surveillance

APPS-2 EUROPE  
APPS-5 SW ASIA  
APPS-3 AFLOAT  
APPS-4 PACIFIC

#### APS-Afloat

- 8 Transloads through Nov 00
- End State 16 Ships
- 30-36 Months Maint Cycle

5 Locations;  
\$6.9B Requirement;  
Project & Sustainment Stocks



# Civilian Contractors on the Battlefield

CASCOM  
White Paper  
(Principles)

*Complete*

ASA  
(RDA & ILE)  
Policy Stmt

*Complete*

AMC

AR 715-xx  
Army Contractors  
On the  
Battlefield

*Draft/Review  
Stage Jan 99*

FM 100-xx

CONTRACTORS  
ON THE  
BATTLEFIELD

1st Draft  
Winter 98

FM 100-10-xx  
Contractors  
On the  
Battlefield

*Due Mar 99*

HQ TRADOC  
Lead

Capstone  
Doctrine

*Draft  
Publish  
Mid '99*

## Emerging Policy and Doctrine

# America's Ability to Fight & Win is Priority #1

## Civilian Contractors on the Battlefield Play an Increasingly Important Role

- Civilian Contractors are Integral to Army Field Sustainment
- Pressure to Outsource & Privatize are Increasing & Make Good Business Sense... in many cases
- Challenges Related to Contractors on the Battlefield Must be Addressed





# Acquisition Excellence

## REVOLUTIONIZING ACQUISITION

Administrative Lead Time/  
Procurement Lead Time Reduction

Modeling &  
Simulation

Credit Card

Prime Vendor Support

Virtual Testing

Cost as an  
Independent  
Variable

Modernization thru Spares

Best Value

COTS

Roadshows

Past  
Performance

Performance Specifications

Integrated Product &  
Process Development

Partnering

OSCR/TOC

Electronic Commerce /  
Electronic Data Interchange

Army Single  
Process Initiative

Corporate  
Contracting





# WE NEED INDUSTRY HELP...

## Administrative/Production Lead Time (ALT / PLT)

### THE PROMISE

\$M	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	POM TOTAL
Cost	0	0	0	0	0	0	0	0
Savings (SMA DBOF)	195*	50	27	14	14	12	10	322
NET	195	50	27	14	14	12	10	322

\* FY97 savings of \$195M taken in FY97 BES

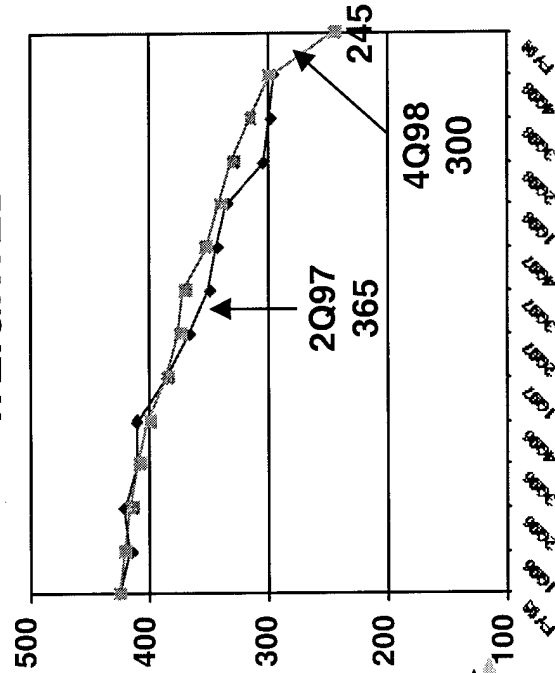
### Initiatives:

- Long Term Contracting
- Electronic Ordering
- Ordering Officers
- Data Base Scrubs
- Best Value w/ schedule as an Independent Variable

**IDIQ**  
(Indefinite Delivery Indefinite Quantity)  
**Multi-year Multiple Items**

**PLT**  
Represents  
77% of Our  
Current  
Lead Time

**ALT/PLT GOALS:  
DOLLAR  
WEIGHTED**

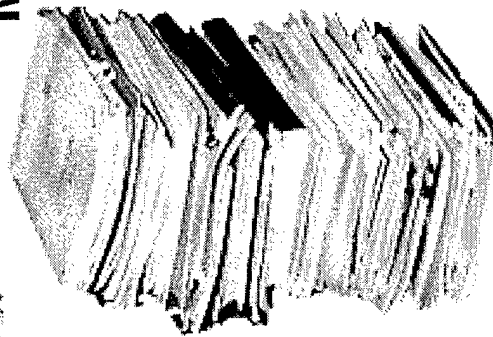


**REMARKS:**  
AMC GOAL is 245 Days  
by end of FY 99



# Acquisition Excellence

## MIL SPECS AND STDs REFORM



**100%  
Scrubbed**

**Army Completed  
Review of 12,354  
Specs & STDs**



1994 1995 1996 1997 1998

DUSD(AR) PAT  
Team Led by  
AMC Principal Deputy  
for Acquisition

## BLUEPRINT FOR CHANGE

### STDs:

176 Canceled  
131 Inactivated  
139 Converted

### SPECS:

2108 Canceled  
2922 Inactivated  
776 Converted

3890 Transferred to DLA

2212 Retained as Detail (Includes 1458 by Institute of Heraldry)

**SECDEF, 1994**

*"...moving to greater use of performance and commercial specifications is one of the most important actions that DoD must take to ensure we are able to meet our military, economic and policy objectives in the future."*

**Challenging  
Four Year  
Goal Successfully  
Completed in Oct 98**

**A Case Study in Progress!**



# Electronic Contracting

*We're on  
the Web*

## Moving to "Paper-Free" Acquisition

- ★ "One Stop" Entry Point for Industry into AMC

### Business Process:

- ★ Contracting Opportunities Across Army via Web Page Links

- View RFPs / IFBs / RFQs
- View Attachments / Exhibits "Online"
- Automated Link to Tech Data Packages
- Electronic Downloading via Modem

### Policy:

- ★ Contracting Guides
- ★ Past Performance Pamphlet
- ★ FAR / DFAR Links

[www.army-acquisition.net](http://www.army-acquisition.net)



## Acquisition Business Web Site

*"Serving the U.S. Army Acquisition Community"*

Army Contracting Opportunities

*Your entry to all open Army Solicitations*

### Acquisition Business

Solicitations,  
Executive Information System,  
Electronic Commerce Links,  
Solicitation Maintenance,  
Registration and Feedback

### Source Selection Resource Center

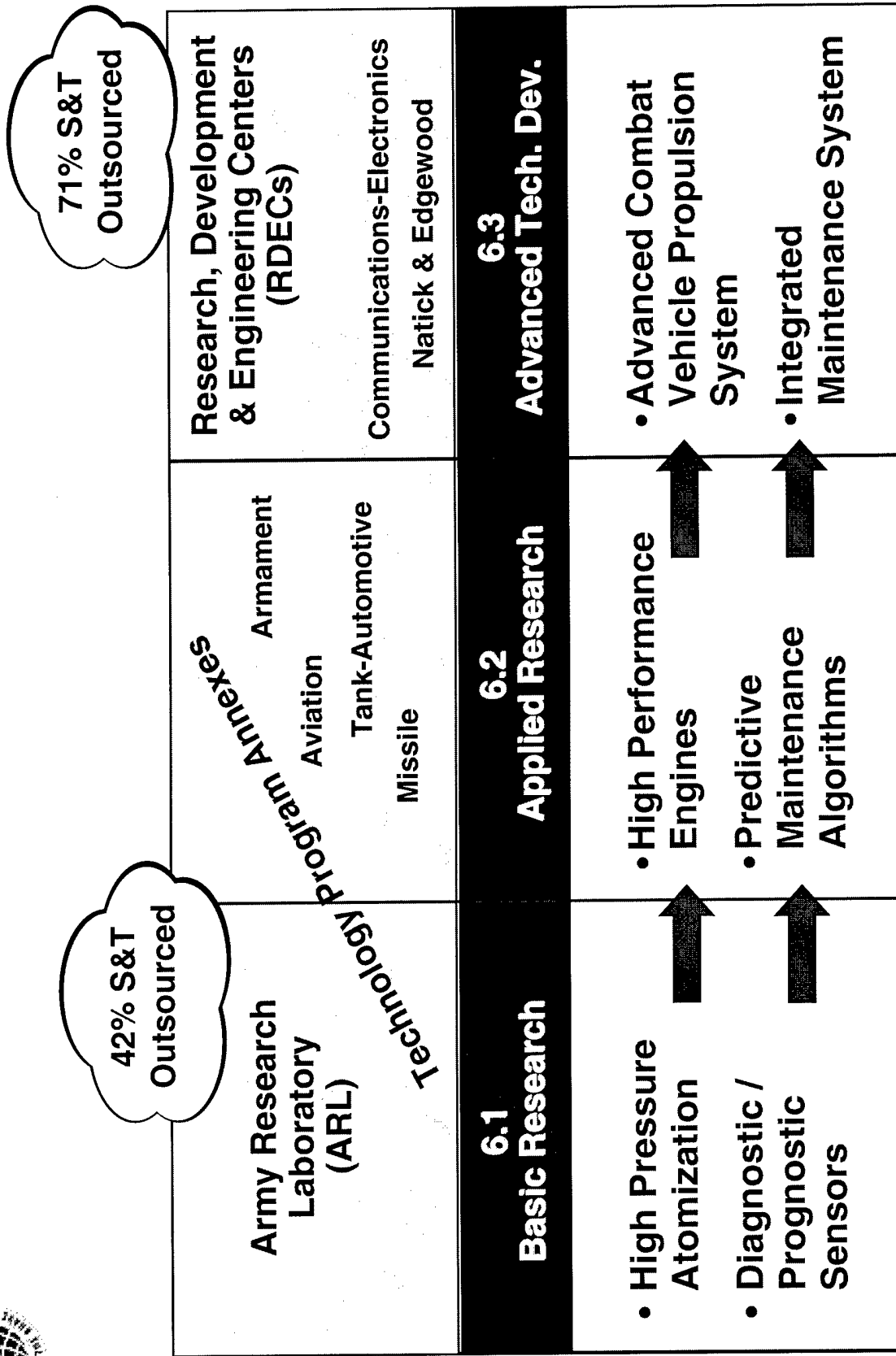
Obtain Source Selection Guidance:  
Best Value  
Past Performance  
Oral Presentations  
Debriefings

### Acquisition Tool Set

Bid & Response Gathering:  
Requirements Feedback  
Download Documents



# AMC Science & Technology Team



*ARL & RDECs provide the S&T necessary for decisive victory.*

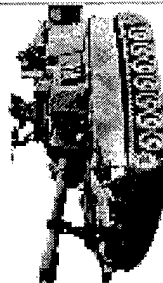


# AMC R&D Partnerships with Industry and Academia



National  
Automotive  
Center

**TACOM**



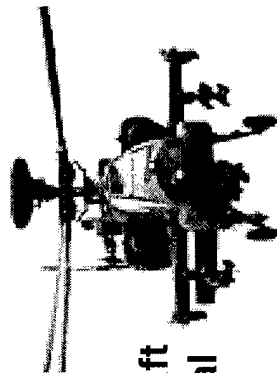
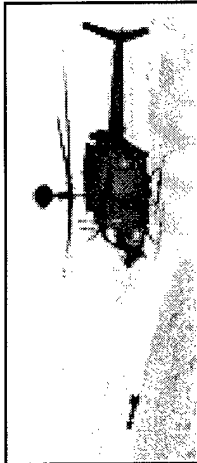
Dual use Automotive  
Technology with...

- DoD Agencies
- Dept of Education
- Dept of Commerce
- Dept of Transportation
- Academia
- Industry

*Chrysler  
Ford*

*General Motors*

**\$19M**



National  
Rotorcraft  
Technical  
Center

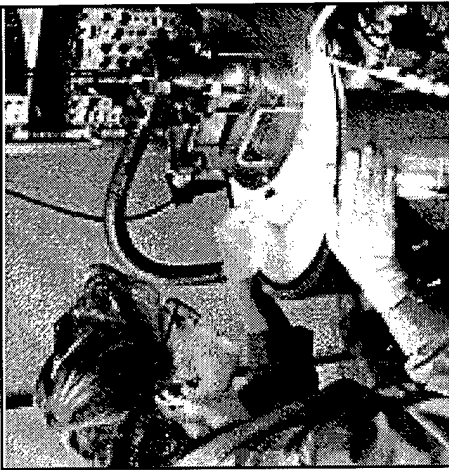
**AMCOM**

Collaborative Rotorcraft  
R & D between...

- Army and Navy
- NASA
- Fed Aviation Admin (FAA)
- Academia
- Industry

*Sikorsky  
Boeing  
Bell*

**\$2M**



Army Federated Labs  
**ARL**

Partnering Science and  
Technology with...

- Universities
- HBCU/MI
- Industry
- Telecomm
- Adv Sensors
- Adv Displays

*Lockheed Sanders  
MIT  
Motorola*

**\$22M**

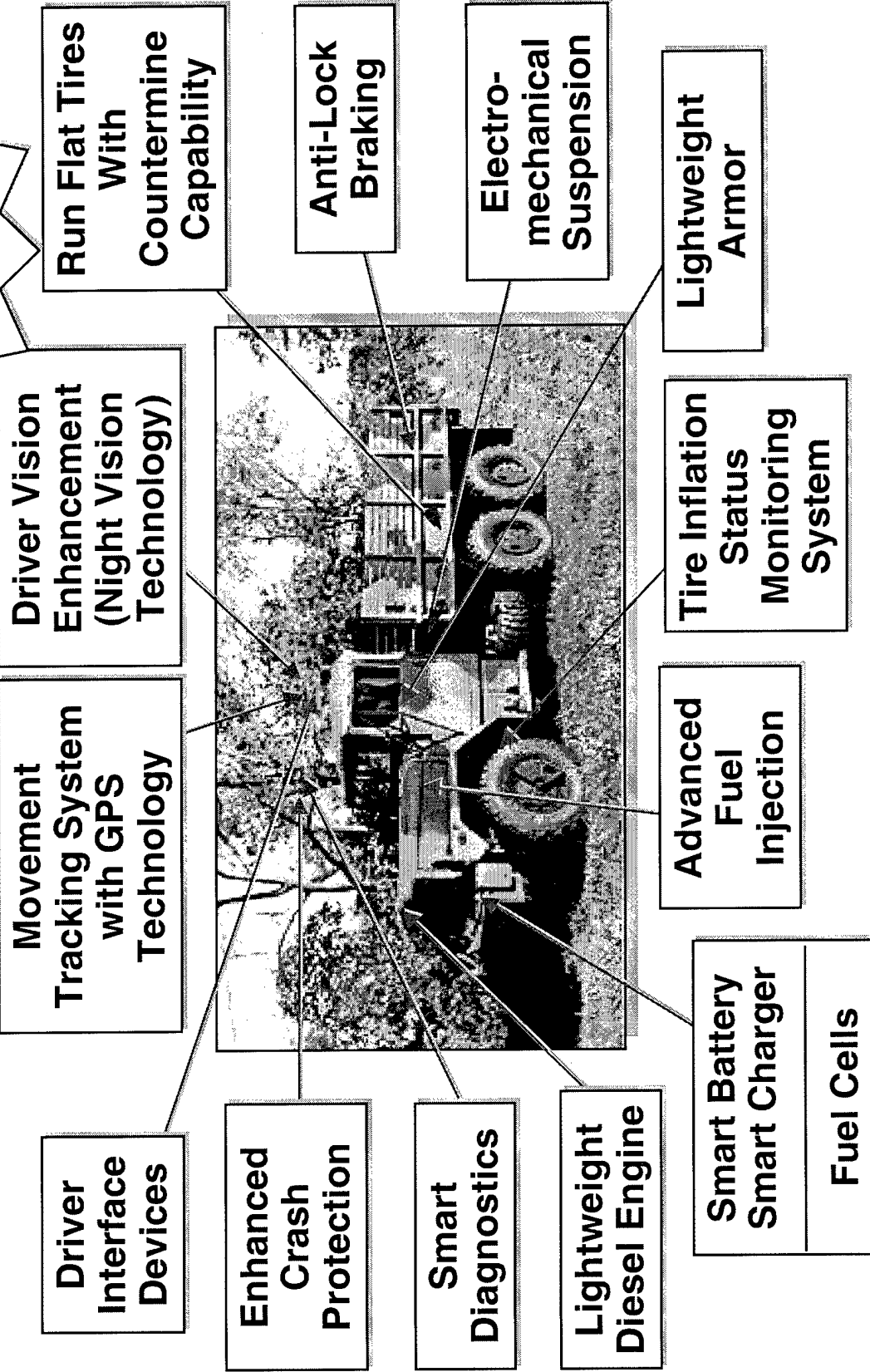
*Partnering is critical to making technology work for soldiers.*



# Technology Generation and Application

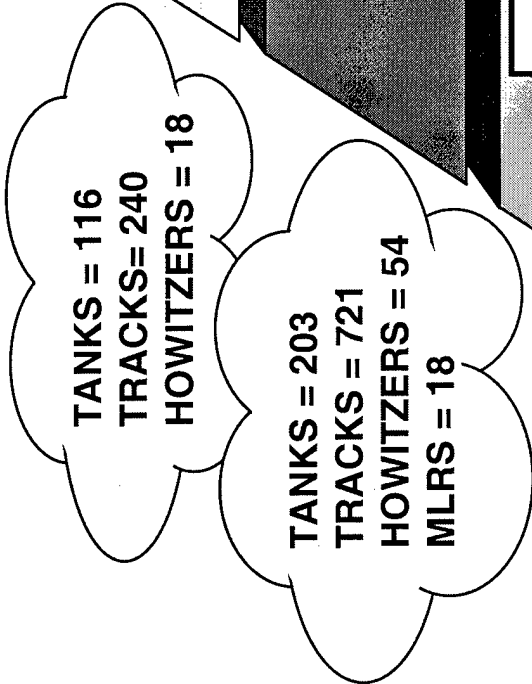
## ARL Project:

Reduce Fuel  
Consumption by  
75% before 2020



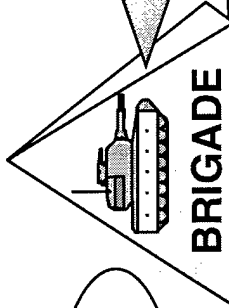


# Trucks: What It Takes



HMMWV = 301  
2-1/2 TON = 139  
5 TON = 84  
HEMTT = 94  
PLS = 40  
**TOTAL = 658**

HMMWV = 1914  
2-1/2 TON = 673  
5 TON = 549  
HEMTT = 426  
PLS = 165  
HETS = 24  
**TOTAL = 3751**



**BRIGADE**

**DIVISION  
XXI**

HMMWV = 11,565  
2-1/2 TON = 3,640  
5 TON = 4,695  
HEMTT = 424  
PLS = 180  
HETS = 481  
**TOTAL = 20,986**

**CORPS - TRADOC IS REVIEWING**

**19,229 VARIOUS TRUCKS**

**TAACOM**

**"SOMETIMES SOLDIERS  
LIKE ME NEED TO BE  
REMINDING THAT TRUCKS  
ARE AS IMPORTANT  
AS TANKS"**

**GEN. NORMAN SCHWARZKOPF**



# America's Army - Bosnia Deployment

## TRUCKS IN BOSNIA TO DATE:

CUCV = 420  
HMMWV = 3,452  
2-1/2 TON = 558  
5 TON = 1,675  
ENGR TRK = 58  
LINE HAUL = 79  
HEMTT = 330  
PLS = 108  
HETS = 72

**TOTAL = 5,077**

## UNIT AREAS

- BAUMHOLDER
- BAD KREUZNACH
- KAISERSLAUTERN

HIGHWAY  
MAIN SUPPLY ROUTES:  
719-868 MILES

KAPOSVAR

INTERMEDIATE  
STAGING BASE

FUEL SUPPORT  
REQUIRES  
137 5,000  
GALLON  
TANKERS

RIVER SAVA

TUZLA

ZAGREB

MAIN SUPPORT  
AREA





# Truck Requirements

## Support the Fleet

Light	124,170
Medium	83,551
Heavy	30,474
<b>Total</b>	<b>238,195</b>

Does Not Include COMPO 4

By FY 97

90% 2.5 Tons

34% 5 Tons

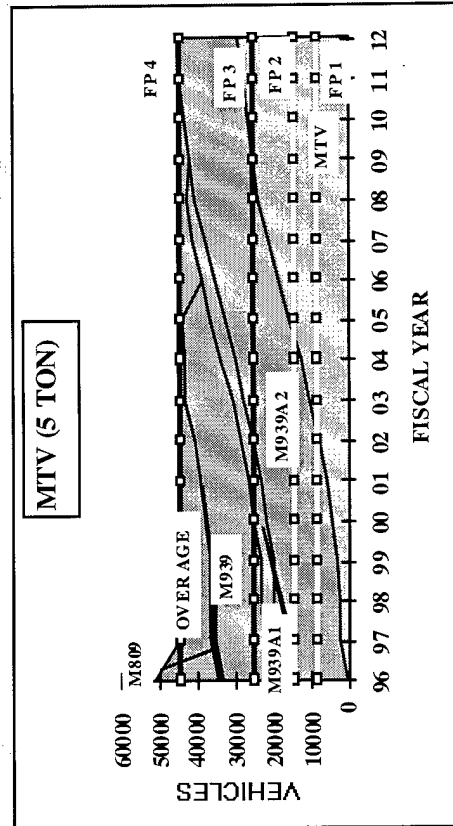
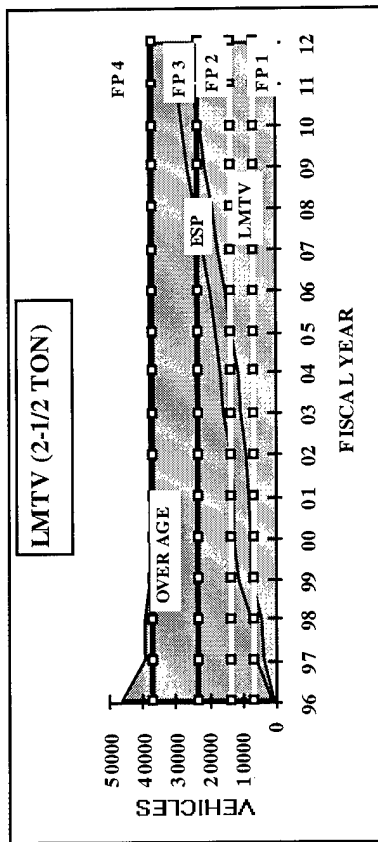
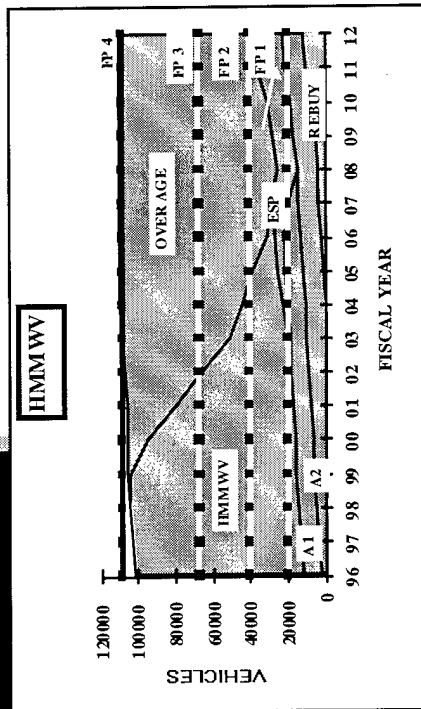
**OVER AGED!**

By FY 00

77% 2.5 Tons

22% 5 Tons

**OVER AGED!**

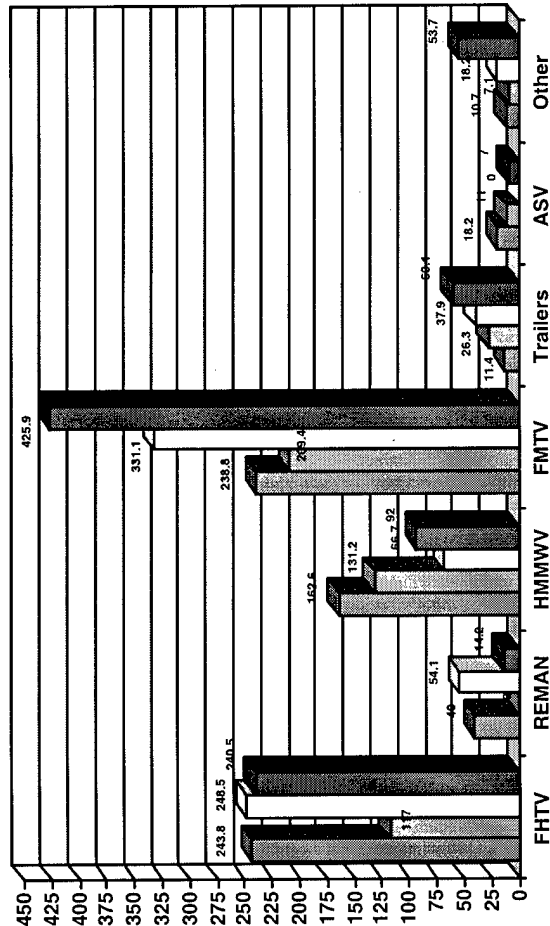




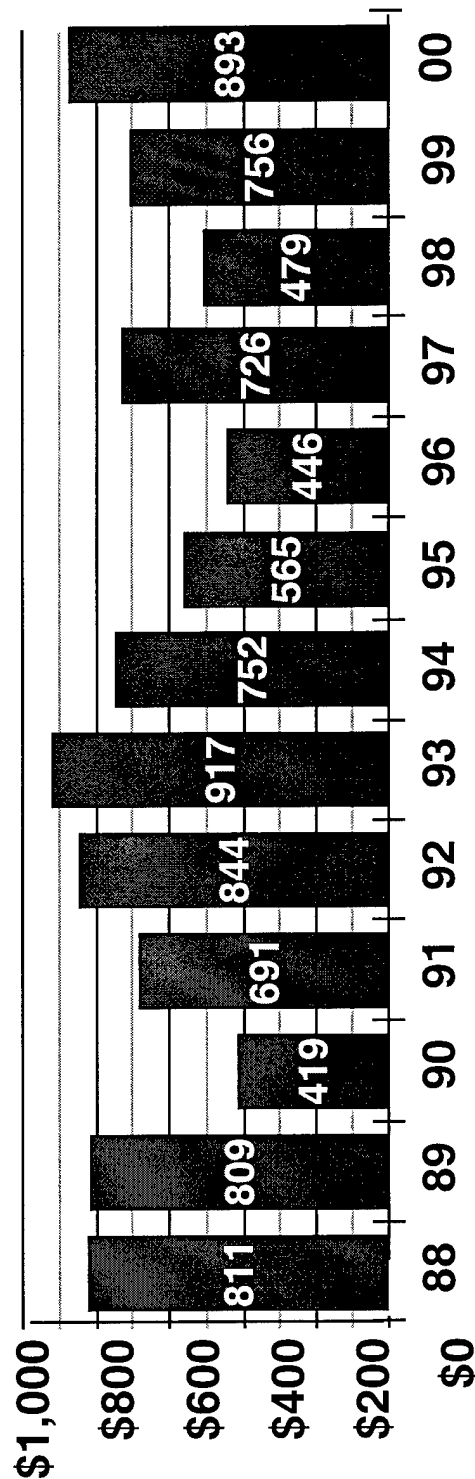
# Trucks Update & Procurement Trends

Tactical and Support Vehicles - 1997 - 2000

- 1997 TOTAL \$725.7M
- 1998 TOTAL \$479.3M
- 1999 TOTAL \$756.1M
- 2000 TOTAL \$893.5M



\$M



FISCAL YEAR  
121



# **WE NEED INDUSTRY HELP...**

## ***Partnering With Industry***

### **National Automotive Center Examples**

- ★ **Lightweight Diesel Engine - Cummins**
- ★ **Protective Coatings - Polymer**
- ★ **Smart Diagnostics - Hughes**
- ★ **Run Flat Tires with Counterme Capabilities - Hutchinson**
- ★ **Electro-mechanical Suspension System - University of Texas**



# Conclusions

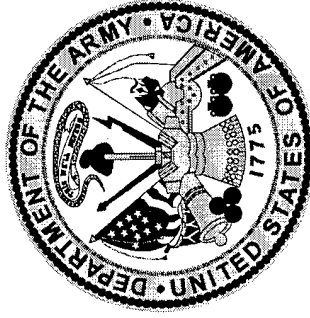
- ★ **Change in Environment From Military-Industrial Complex to an Industrial-Military Complex**
- ★ **Requirements Based on Capability Instead of Threat**
- ★ **AMC Has an Increased Role in TWV**
- ★ **Budget Pressures Are a “Fact of Life”**
  - Congressional Plus-Ups Have Helped in the Past
  - Keen Interest in FMTV Production
  - Other Customers Continue to Support Remanufacture
- ★ **Trucks Will Be More Important Than Ever in the Paradigm Shift From a Supply-Based Distribution System to a Transportation-Based Distribution System, Especially PLS**
- ★ **Industry Has Truly Served the Army Well**

**Thanks For Your Support to the Army**

**SOLDIERS** Are Our Credentials!



1999 TACTICAL WHEELLED  
VEHICLE CONFERENCE - "HOW  
HEALTHY IS OUR FLEET?"  
ODCSOPS PERSPECTIVE



FEBRUARY 1, 1999

COL(P) MICHAEL A. VANE

DIRECTOR OF INTEGRATION

ODCSOPS

America's ARMY

**SOLDIERS** Are Our Credentials!



## **TOPICS**



- MODERNIZATION AND FUNDING
- INITIATIVES
- NEW DIVISION DESIGN
- ECONOMIC USEFUL LIFE
- FLEET STATUS
- SUMMARY

**America's ARMY**



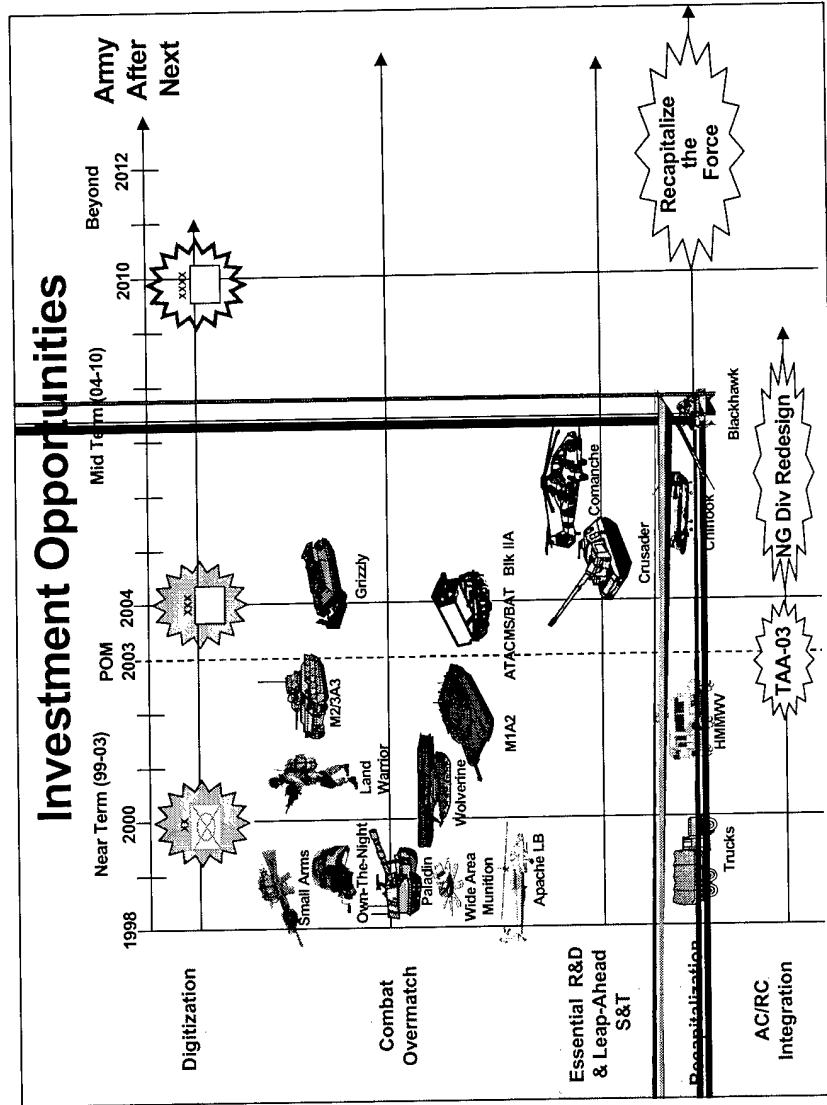
## **ARMY TOP 10**

1. Non offset funding for all Contingency Operations
2. Quality of Life Issues (Pay, Pay reform, Retirement benefits, Housing and Medical )
3. Support Army Endstrength & Manyears (AC; RC; Civ) Initiatives
4. Fund O&M as allocated and at least to the requested level:
  - Ground OPTEMPO and Flying Hours (All Components)
  - BASOPS and RPM
  - Depot Maintenance
5. Fund Digitization, FORCE XXI and AECP as Requested
  - Technologies across C4I and weapons platforms
  - FDD by FY 00 and an FDC by FY 04
6. Total Army Force Integration.
7. Critical Warfighter Initiatives
  - Comanche
  - Crusader
8. Institutional Training Policy
9. Preserve MILCON (1+1 Barracks initiative and Deployment Platforms).
10. Strategic Mobility (infrastructure, Prepo Bde Sets and Strategic Lift).

**SOLDIERS Are Our Credentials!**



# ARMY INVESTMENT OPPORTUNITIES



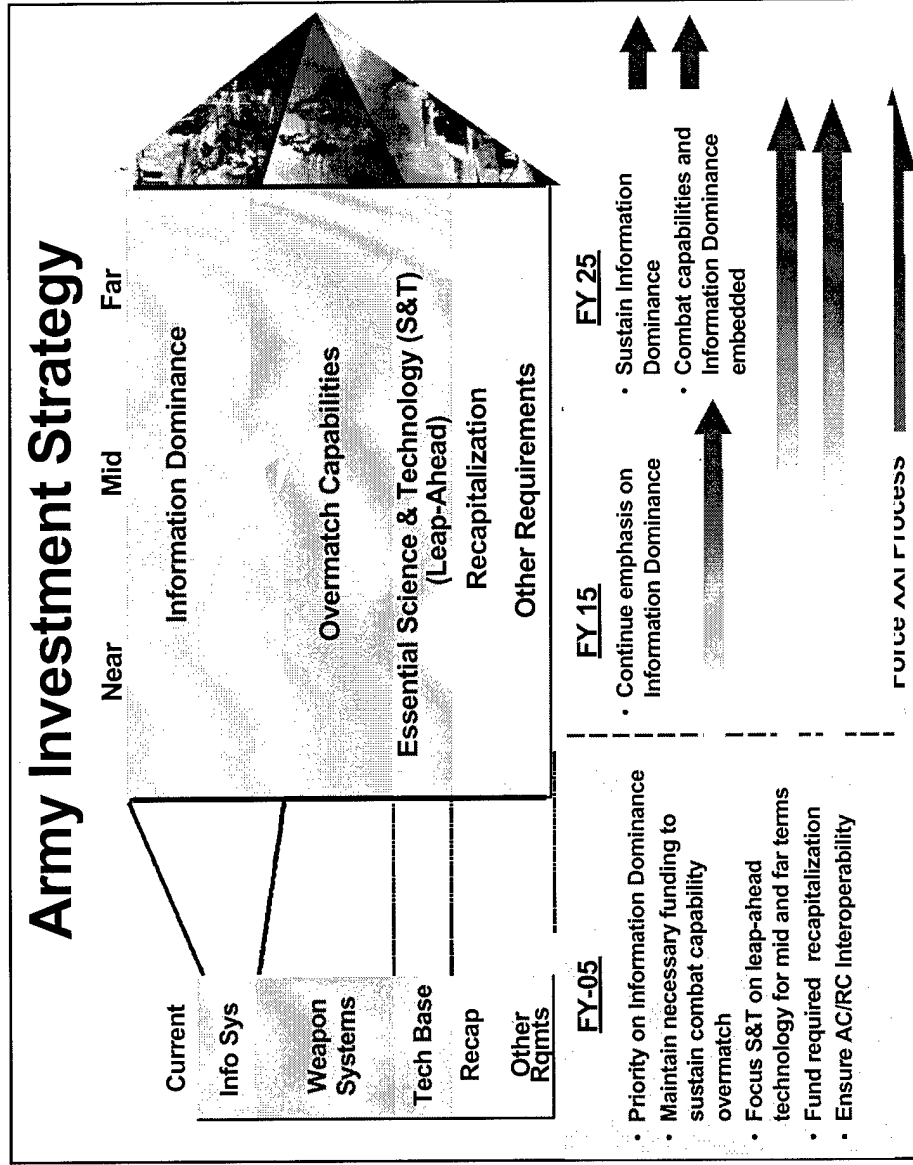
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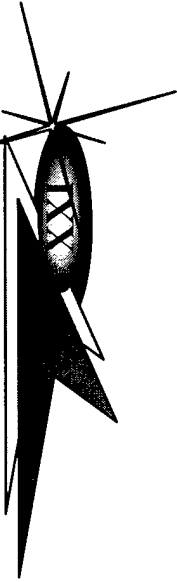


# ARMY INVESTMENT STRATEGY



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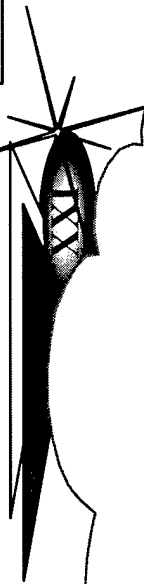


## **FUNDING FACTS**

- DEFENSE BUDGET IS 3 PERCENT OF THE GROSS DOMESTIC PRODUCT.
- DEFENSE BUDGET IS 15 PERCENT OF THE FEDERAL BUDGET.
- THE ARMY BUDGET IS 25 PERCENT OF THE DEFENSE BUDGET.
- RESEARCH DEVELOPMENT AND ACQUISITION (RDA) IS 19 PERCENT OF THE ARMY BUDGET .
- TRUCK PROCUREMENT IS 7 PERCENT OF THE RDA BUDGET .

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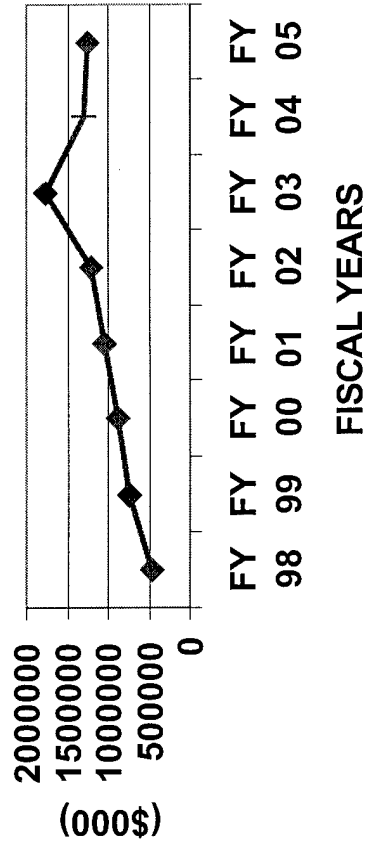
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## FUNDING PROFILE

\$1.1B AVG PER YEAR 98-05  
\$1.2B AVG PER YEAR 00-05

**TWV FUNDING**



—◆— 00 PB

### RC FUNDING

\$382M AVG PER YEAR 98-05  
\$473M AVG PER YEAR 00-05

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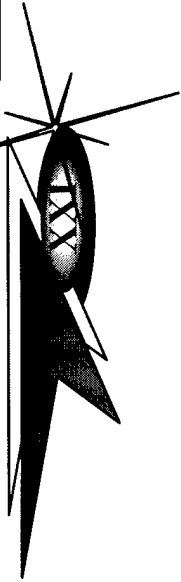


## **NATIONAL AUTOMOTIVE CENTER (NAC)**

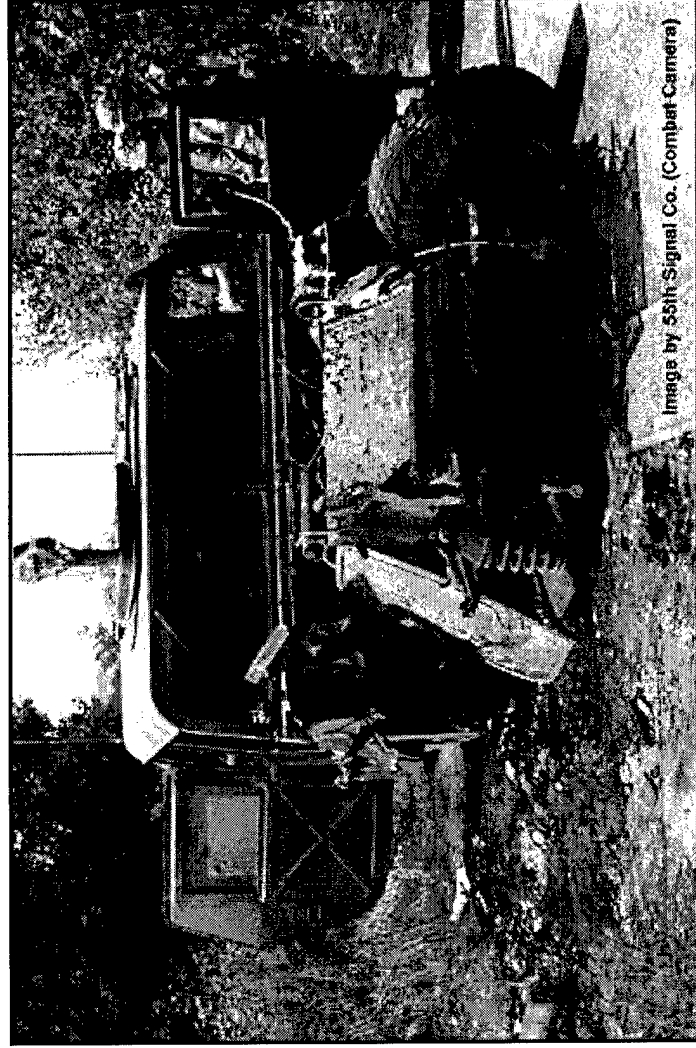
- PART OF THE TANK-AUTOMOTIVE AND ARMAMENTS COMMAND (TACOM)
- DOD FOCAL POINT FOR COLLABORATIVE AUTOMOTIVE R&D WITH INDUSTRY , ACADEMIA AND OTHER GOVERNMENT AGENCIES
- RESPONSIBLE FOR ACCELERATING THE INFUSION OF COMMERCIAL TECHNOLOGY INTO MILITARY LAND WARFARE SYSTEMS
- LEVERAGES DOD INVESTMENT IN MILITARY LAND WARFARE SYSTEMS THROUGH STRATEGIC, COST-SHARED PARTNERSHIPS; ARMY'S LEADER IN DUAL-USE APPLICATION
- FOCUS IN FIVE TECHNOLOGY AREAS: FUEL EFFICIENCY, VEHICLE MODERNIZATION, SAFETY, MAINTENANCE AND LOGISTICS, AND MANUFACTURING INNOVATION
- PRESENT INITIATIVES: HYBRID ELECTRIC, ADVANCED DIESELS, FUEL CELL HYBRIDS, NEXT GENERATION TACTICAL TRUCK TECHNOLOGIES, WASTE OIL REUTILIZATION, SMART TRUCK TECHNOLOGIES, AND COLLABORATIVE DESIGN

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# CREW PROTECTION



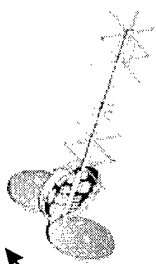
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# MOVEMENT TRACKING SYSTEM

REQUIREMENT

33,379 (EST)

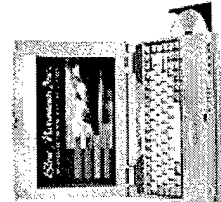


Near-Real Time Position Locations of Mobile Unit  
Messaging Capability to Re-direct Mobile Unit Due to:

- Congestion
- Enemy Situation
- Change in Plan (Destination Unit Moved, or Priority Shift)

EXPANDED FROM  
PLS TO ALL TWV.

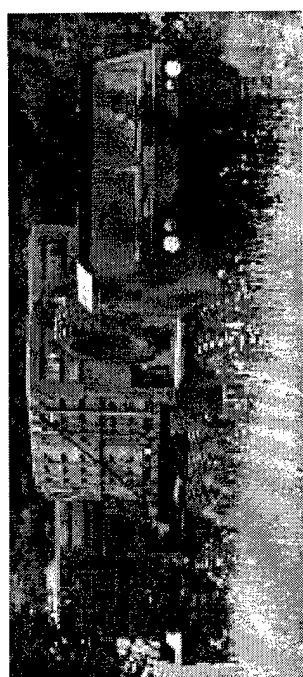
WRAP  
PROGRAM



CONTROL STATION  
(not dependent on  
landline)



I/O Device w/ Map  
Subscriber Controller  
GPS Antenna  
Satellite Antenna



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## ***DIVISION DESIGN COMPARE***

- HMMWV + 22
- ASV + 29
- LMTV -102
- MTV - 57
- HEAVY +84

- TRAILERS -25
- TRUCKS -24

INCREASE IN HEAVY  
MORE EXPENSIVE  
VEHICLES.

### **AOE vs D-XXI HEAVY MECH DIVISIONS**

#### **TACTICAL WHEELED VEHICLES**

		AOE		DXXI				AOE		DXXI				AOE		DXXI			
LIN	TYPE	QTY	Δ	LIN	TYPE	QTY	Δ	LIN	TYPE	QTY	Δ	LIN	TYPE	QTY	Δ	LIN	TYPE		
D34883	DOLLY MOBILIZER, M1022	7	7	0	T45465	HEMAT, TRL, M989A1	71	208	137	T96838	FLT BED TRL, 7.5-TON, M1073	22	8	-14					
G34805	DOLLY MOBILIZER, M720	13	10	-3	T58161	HEMTT, TNKR WW, M978	26	33	7	W95811	1-1/2T TRL, M105	54	36	-18					
S70027	SEMI TRL, FLT BED, M871	115	44	-71	T59048	HET, TRACTOR, M1070	24	24	0	W98825	WATER TRL, M149	199	184	-15					
S70243	SEMI TRL, WRKR, M270	1	1	0	T59278	HEMTT, CGO, M977	112	25	-87	Z06421	ASV	0	29	29					
S70517	SEMI TRL, LOWBED, M172	10	6	-4	T60081	LMTV, CGO, M1078	582	505	-77	Z36068	LMTV, TRL, M1082	503	352	-151					
S70859	HET TRL, M1000	24	24	0	T60149	LMTV, CGO WW, M1078	137	103	-34	Z36204	1-1/4T TRL, M1102	100	144	44					
S73372	SEMI TRL, 5,000 GAL, M969	70	74	4	T61103	TRUCK TRAC, LINE HAUL	1	0	-1	Z36272	3/4T TRL, M1101	404	460	56					
S74832	SEMI TRL, VAN, M749/M750	23	15	-8	T61239	MTV, TRACTOR, M1088	241	187	-54	Z62562	HMMWV, EXP CAP, XM1113	61	59	-2					
S75038	SEMI TRL, VAN, M146	5	0	-5	T61307	MTV, TRAC WW, M1088	12	16	4	Z62630	HMMWV, ARMD, XM1114	133	106	-27					
S75175	SEMI TRL, VAN M129	55	46	-9	T61494	HMMWV, CGO, M998	1201	1237	36	Z90712	MTV, TRL, M1095	38	34	-4					
T07679	HMMWV, HVY, M1097	326	368	42	T61562	HMMWV, CGO, WW, M1038	126	98	-28	Z94047	MTV, TANKER, M1091	56	32	-24					
T38844	HMMWV, AMBULANCE, M997	27	27	0	T61704	MTV, LWB, M1085	33	17	-16	Z94560	MTV, EXP VAN, M1087	44	72	28					
T39518	HEMTT, CGO WW, M977	53	132	79	T61772	MTV, LWB WW, M1085	1	0	-1	TOTALS			5527	5478	-49				
T39586	HEMTT, CGO, M985	36	48	12	T61908	MTV, CGO, M1083	133	173	40	DISCOM			1733	2631	898				
T39654	HEMTT, CGO WW, M985	6	6	0	T63093	HEMTT, WRKR, M984	51	37	-14	NON_DISCOM			3794	2847	-947				
Z40639	HEMTT - LHS	0	0	0	T87243	HEMTT, TNKR, M978	159	145	-14	% of DIV in DISCOM			31.4%	48.0%	16.7%				
T40999	PLS, W/O MHE, M1075	9	111	102	T92242	HMMWV, ARMT CR, M1025	18	19	1	B83002	BED CGO, PLS, M1077	108	324	216					
T41067	PLS, W/MHE, M1074	54	54	0	T93484	LMTV, VAN, M1079	56	65	9	Z27727	CONTAINER LIFT KIT (CLK)	3	10	7					
T41135	MTV, CGO WW, M1083	9	4	-5	T93761	PLS, TRL, M1076	9	45	36										
T41203	MTV, CGO W/MHE, M1084	39	15	-24	T94709	MTV, WRKR, M1089	38	33	-5										

UPDATED 8/10/98

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## **CURRENT FLEET AGE BY FORCE PACKAGE AND COMPO**

FLEET	EUL	R3	FP 1		FP 2		FP 3		FP 4	
			AC	NG	AR	AC	NG	AR	AC	NG
CUCV	11	1997	11.7	11.7	11.7	11.8	11.7	11.7	11.7	11.7
HMMWV	14	1999	7.2	7	6.3	7.3	5.9	7.3	6.9	7.7
2.5 T	20	2013(LMTV)	18.8	25.6	27.4	27.5	28.6	26.5	27.6	27.4
5 T	22	2015(MTV)	9.8	16.3	10.4	12.4	23.7	18	12.1	20.8
M915	20	1998	13.6	12.4	7.6	14.3	3.3	0	15.5	17.9
HEMTT	20	2004	10	9.7	9.7	10.2	10.7	10.1	9.6	10.2
PLS	20	2012	2.1	2.1	2.1	2	0	2	2.1	2
HET	20	2012	3.1	3.3	4.4	5.7	0	6.2	3.5	18.5
LET/MET	20	1998	11.4	7.2	9.8	7.5	0	11.9	11.8	12.6
ALL			10.1	13.3	11.3	11	10.3	14.3	12.6	15.8

**VEHICLE AGE BY FORCE PACKAGE SHOWS RESULTS  
OF FIELDING PRIORITIES.**

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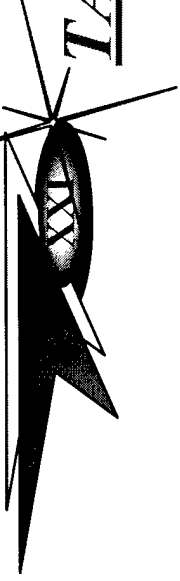
## OVERALL FLEET AGE

### FLEET AVERAGE AGE 1998 vs END POM/EPA

VEHICLE	ECONOMIC LIFE	MAX FLEET AVE AGE OBJECTIVE	% OVER	FLEET AVERAGE AGE 1998	2014
CUCV	12	6	21	12.6	N/A
HMMWV	15	7.5	0	7.9	17.0
SUSV	15	7.5	0	7.1	22.9
M151	15	N/A	100	20.7	N/A
M880	7	N/A	100	20.1	N/A
2-1/2 TON	20	10	85	23.3	13.8
5 TON	22	11	29	14.3	6.9
PLS	20	10	0	2.4	16.0
HEMTT	20	10	0	10.7	6.7
ENG TRAC	20	10	0	12.8	15.7
LINE HAUL	20	10	0	14.5	12.8
HET	20	10	31	6.2	14.8
YARD TRAC	10	5	100	16.6	8.3
TOTAL AVG		8.8	23	13.0	13.5

**FUNDING IN POM AND EPP JUST MAINTAINS AGE**

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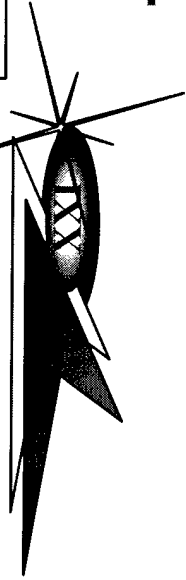


**TACTICAL WHEELED VEHICLE  
USEFUL LIFE**

**DETERMINATION PROGRAM  
(TWVULDP)**

- METRIC CURRENTLY USED TO DETERMINE FLEET REPLACEMENT TIMES.
- MID 1980'S METHODOLOGY.
- UPDATE REQUIRED BASED ON NEW DATA AVAILABLE FOR FLEET MANAGEMENT.
- IPT FORMED IN OCTOBER TO REVIEW. JOINT OPS/SARD CHAIR.
- FLEET PLANNING OFFICE IN TACOM HAS PROGRAM LEAD.
- LIGHT FLEET FIRST TO BE REVIEWED.
- FINAL REPORT OCTOBER 1999.

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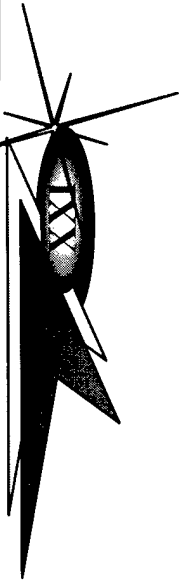


## **TWV FLEET STATUS**

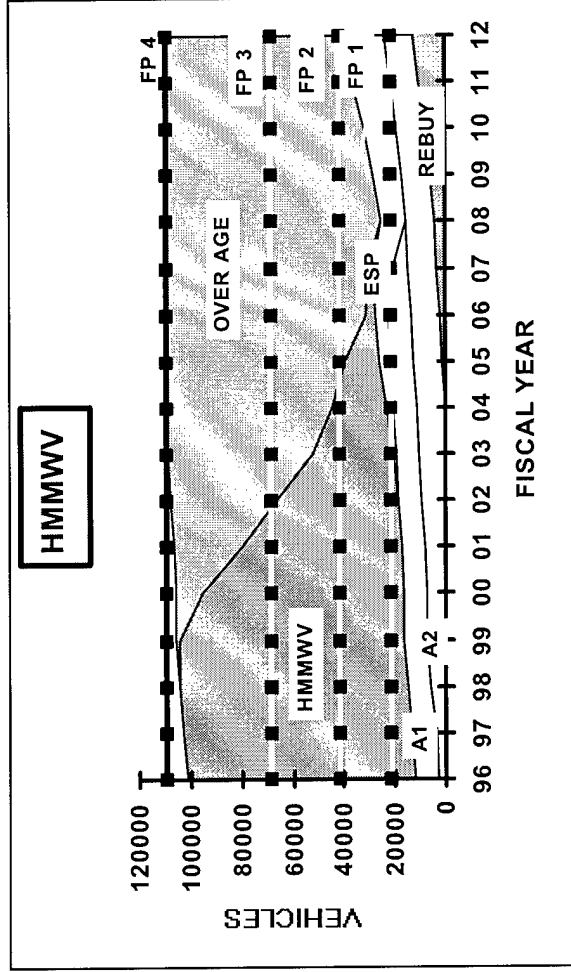
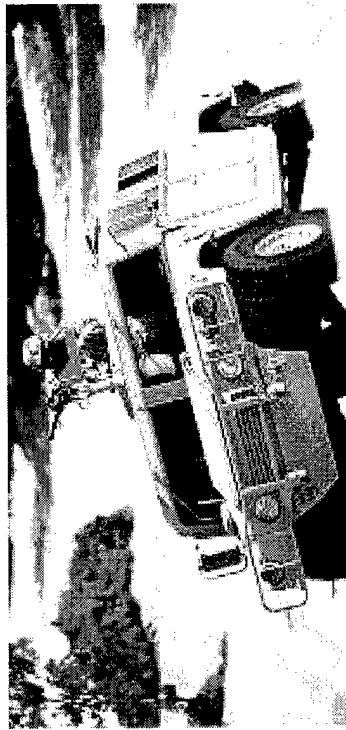
- **LIGHT**
- **MEDIUM**
- **HEAVY TACTICAL**
- **HEAVY COMMERCIAL**

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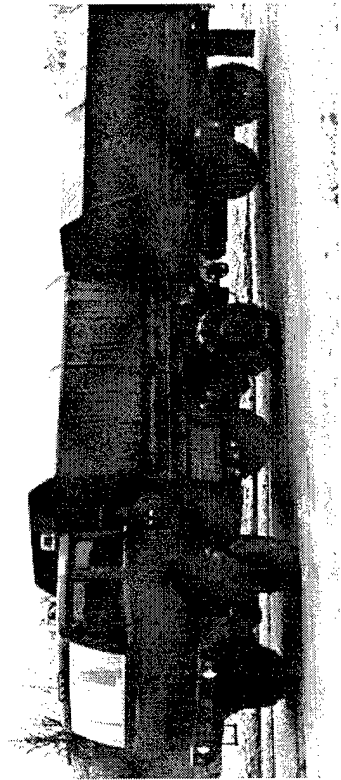
## HMMWV STATUS



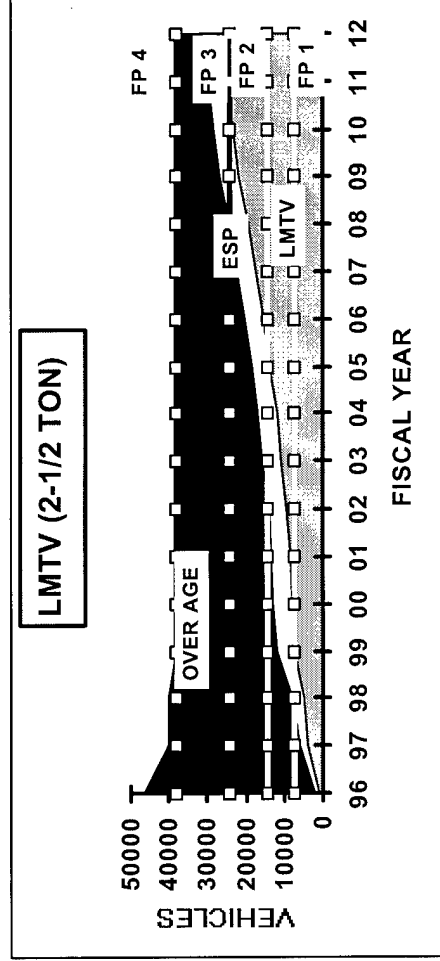
**WILL REQUIRE ADDITIONAL FUNDING TO COMBAT OVER AGE PROBLEM. ANALYSIS BASED ON AoA TO BE SUBMITTED TO CONGRESS THIS QUARTER.**

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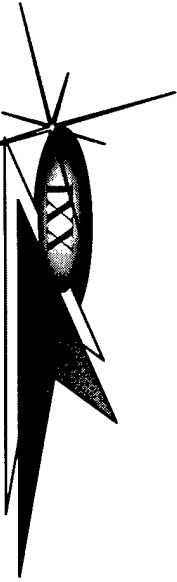
## LMTV (2-1/2 TON) STATUS)



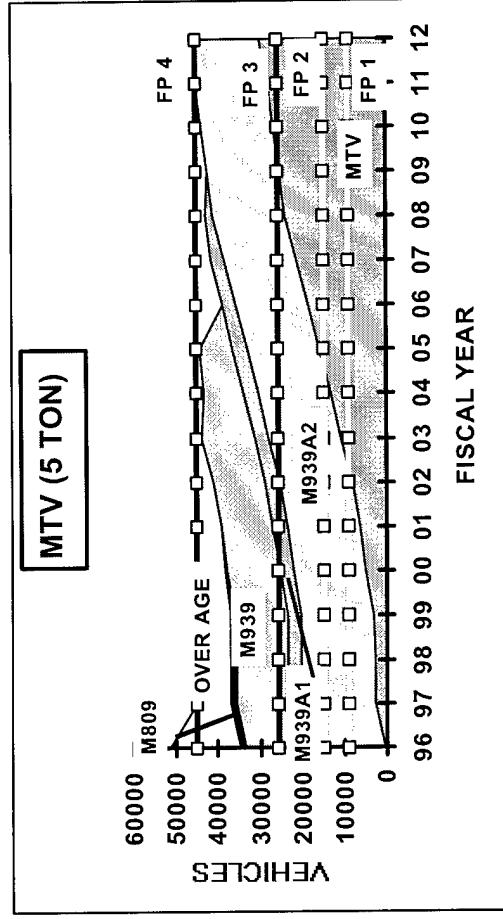
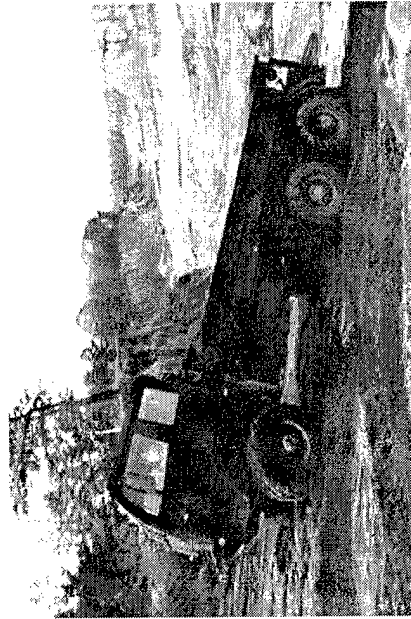
**MOVEMENT OF FUNDS FROM ESP HELPS  
IMPROVE VEHICLE FILL!**

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## MTV (5-TON) STATUS



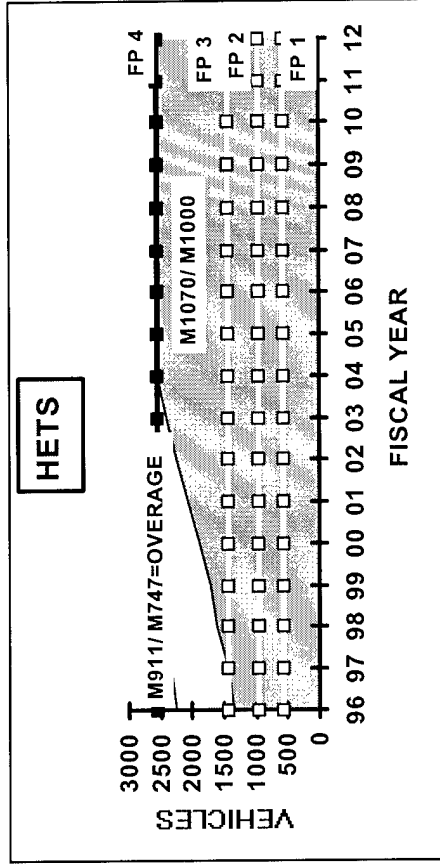
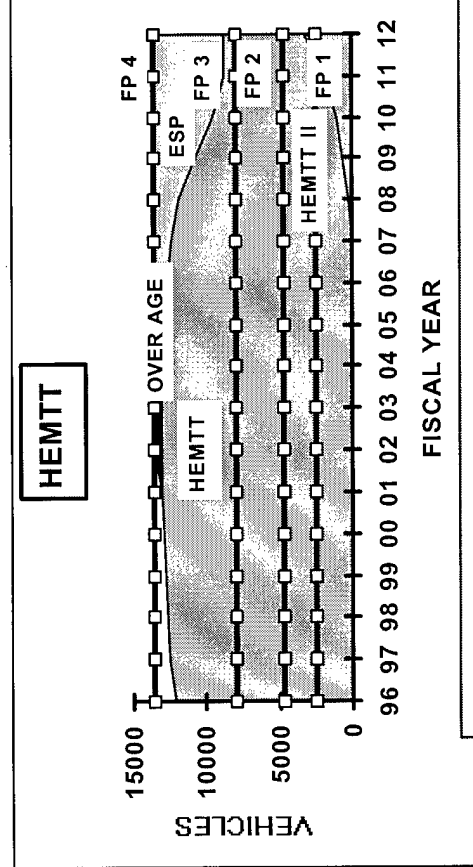
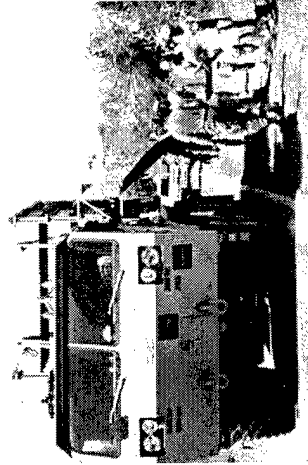
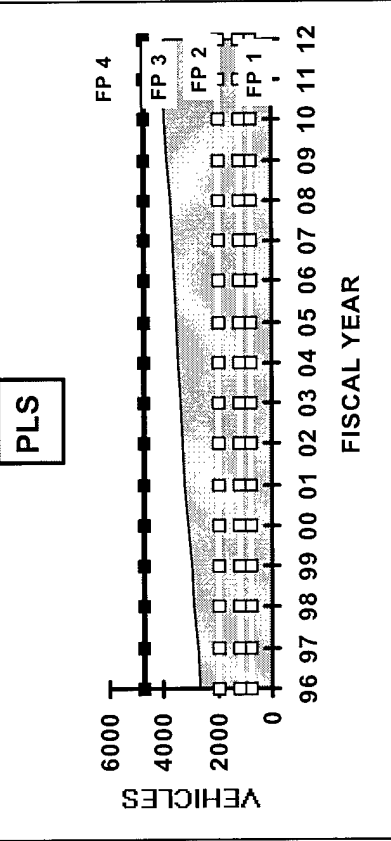
**OVERALL THE FIVE TON FLEET REMAINS  
IN GOOD SHAPE.**

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# HEAVY TACTICAL TRUCK STATUS



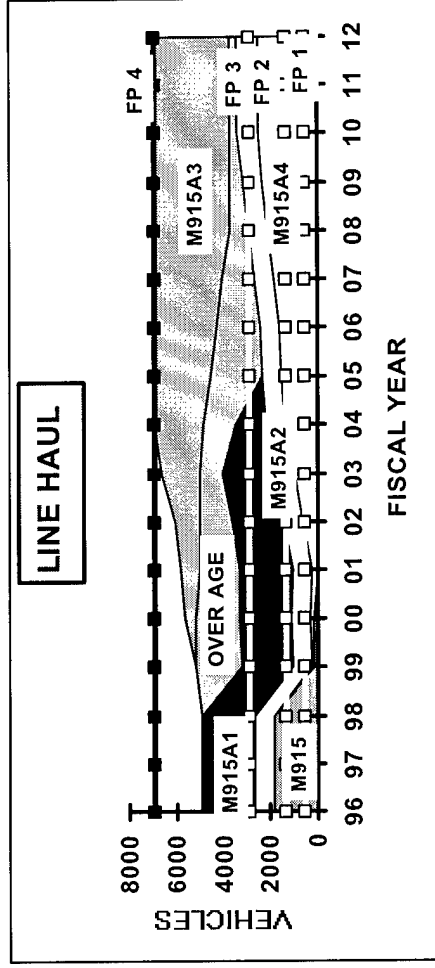
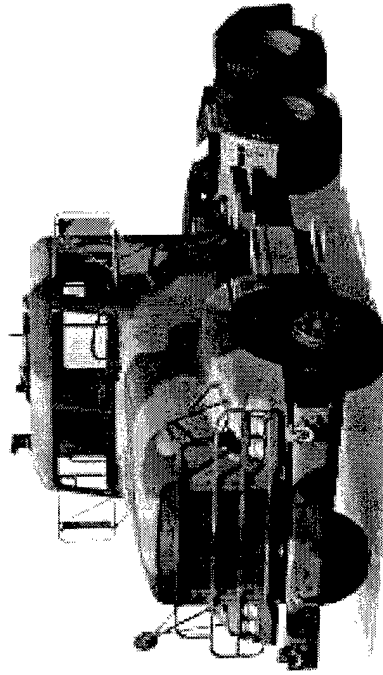
## OVERALL HEAVY FLEET IN GOOD SHAPE

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## LINE HAUL TRACTOR STATUS

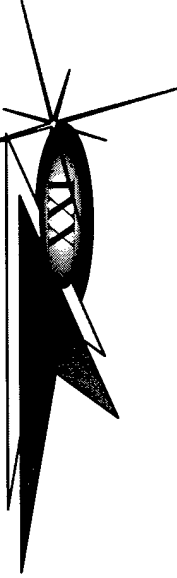


**LINE HAUL FLEET IN GOOD SHAPE. MAJORITY  
OF NEW TRUCKS ARE FOR NG AND AR.**

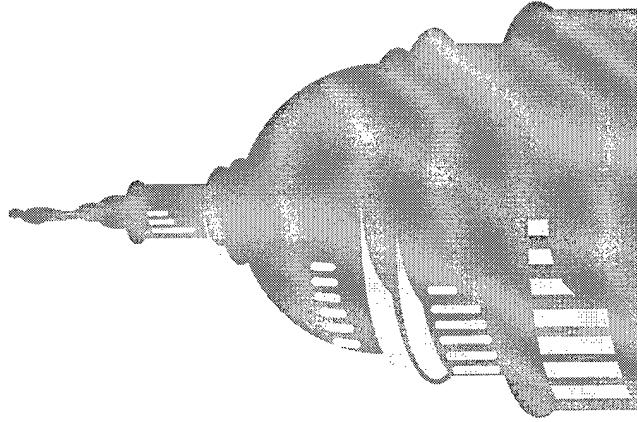
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## **CONGRESSIONAL,** **SUPPORT**



### **KEY PLUS UPS:**

- \$3.8M FORWARD REPAIR SYSTEM - HEAVY(FRS-H) - WRAP FUNDING
- \$55M HMMWV PRODUCTION.
- \$13.2M 2-1/2 TON EXTENDED SERVICE PROGRAM (ESP).
- \$6M SELF LOAD/OFF-LOAD TRAILER.

**OVERALL: +\$82.6M - \$26.9M = NET \$55.7M**

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## **SUMMARY**

- FUNDING FOR TACTICAL WHEELED VEHICLES CONTINUES TO HOLD UP WELL.
- LIGHT FLEET AoA BASE FOR FUTURE COURSE.
- NATIONAL GUARD AND ARMY RESERVE TO RECEIVE NEW TRUCKS AND TRAILERS
- METRIC TO DETERMINE FLEET REPLACEMENT UNDER REVIEW.
- THANKS TO INDUSTRY AND CONGRESS FOR CONTINUED SUPPORT OF PROGRAMS.



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# **1999 NDIA Tactical Wheeled Vehicles Conference**

## ***Marine Corps Systems Command***

***Col Mike Kephart, USMC***

**Director, Combat Support & Logistics Equipment**

Combat Support & Logistics Equipment -- Marine Corps Systems Command -- Marine Corps Materiel Command

Slide 1

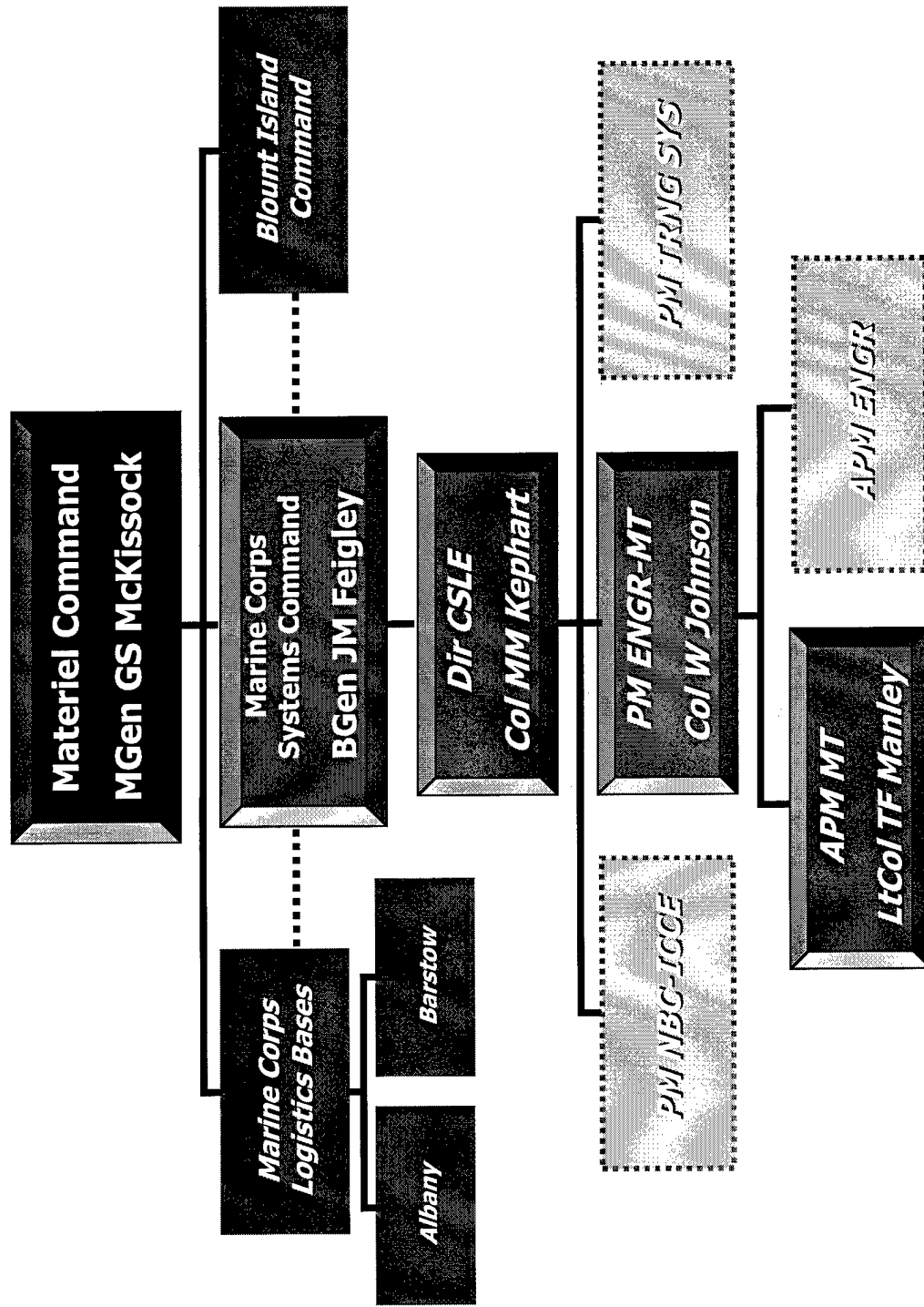


## **Agenda**

- ***Marine Corps Materiel Command***
- ***CSLE Organization***
- ***Programs***
- ***Future Challenges***
- ***What You Can Do***



# Marine Corps Materiel Command

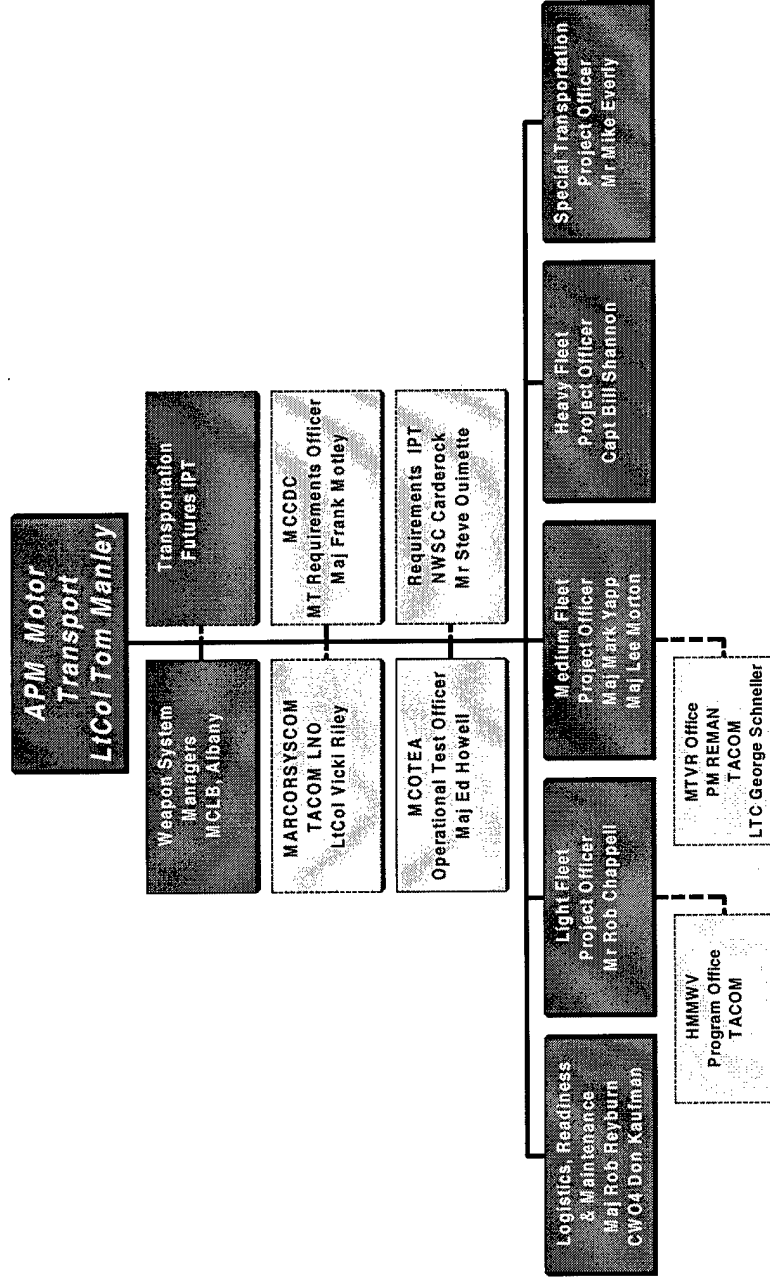


Combat Support & Logistics Equipment -- Marine Corps Systems Command -- Marine Corps Materiel Command

Slide 3



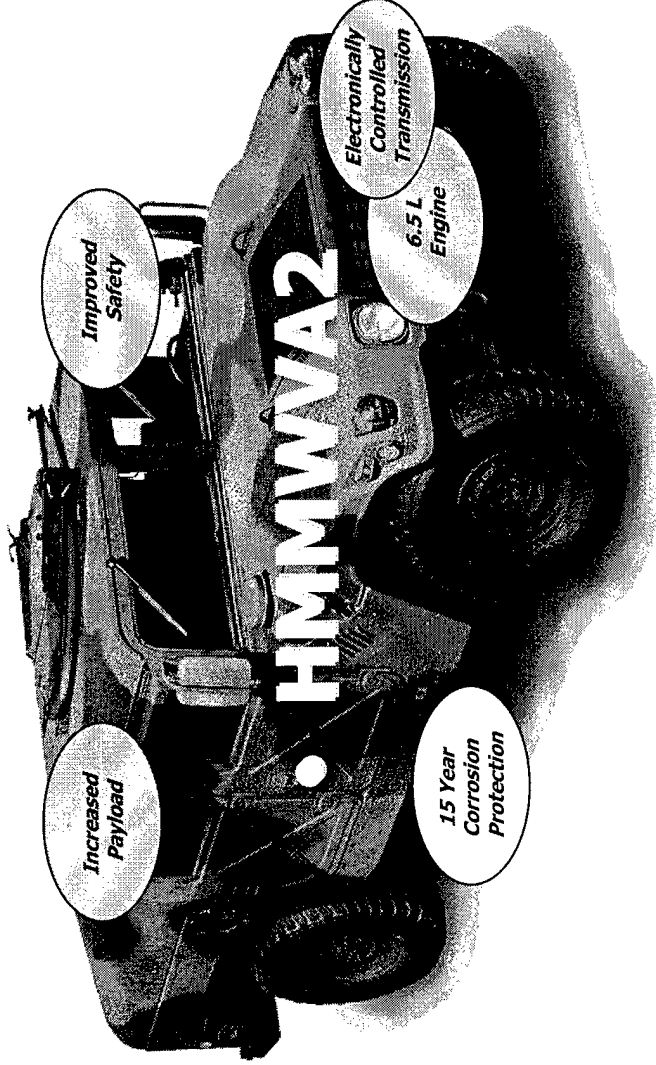
# APM Motor Transport



**Mission:** Provide the management and support for Materiel Life Cycle Management (MLCM), to include research, development, acquisition & sustainment, of Motor Transport and associated transportation systems in order to support OMFTS and STOM while reducing TOC.



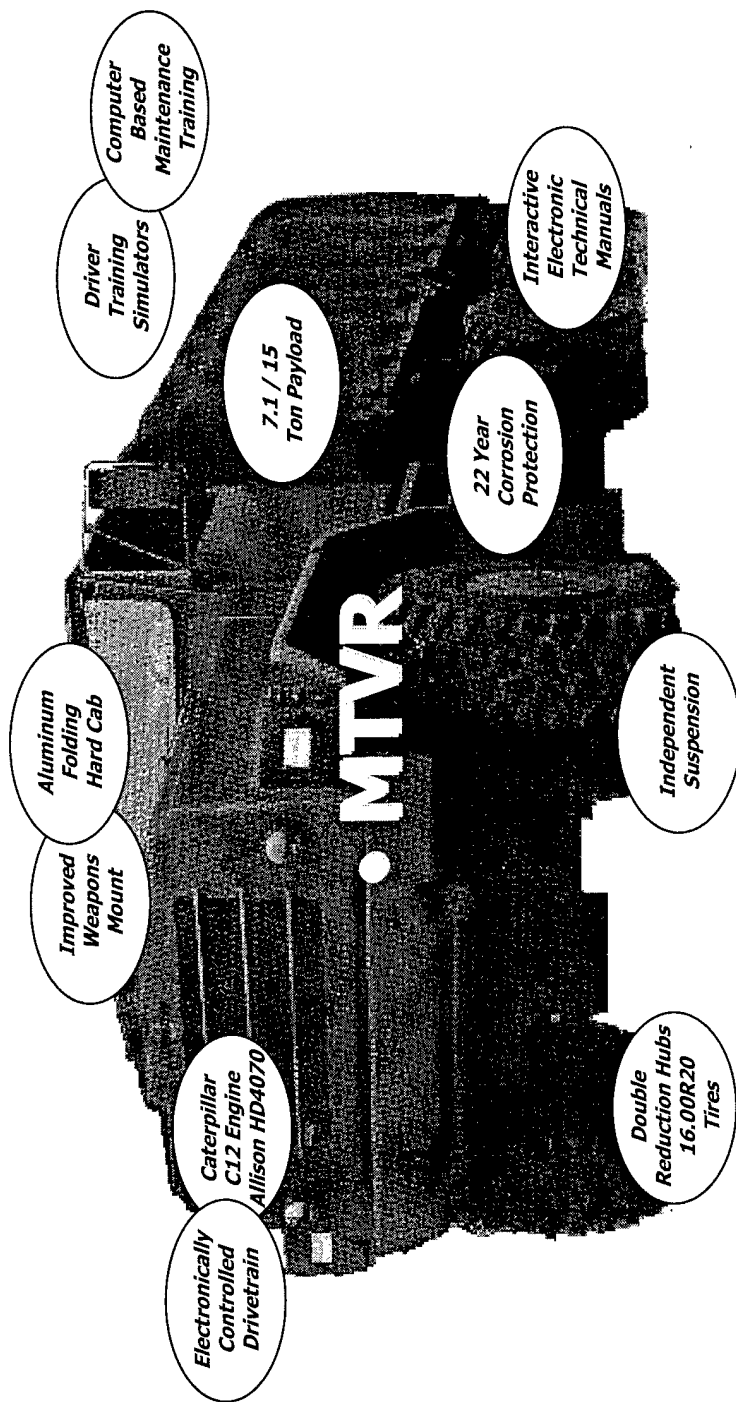
## Light Fleet



- **HMMWV**
- **M101A3 / M116A3 Trailers**
- **Internally Transportable - Light Tactical Vehicle (IT-LTV)**



## Medium Fleet



- **M809/939 5-Ton Series Trucks**

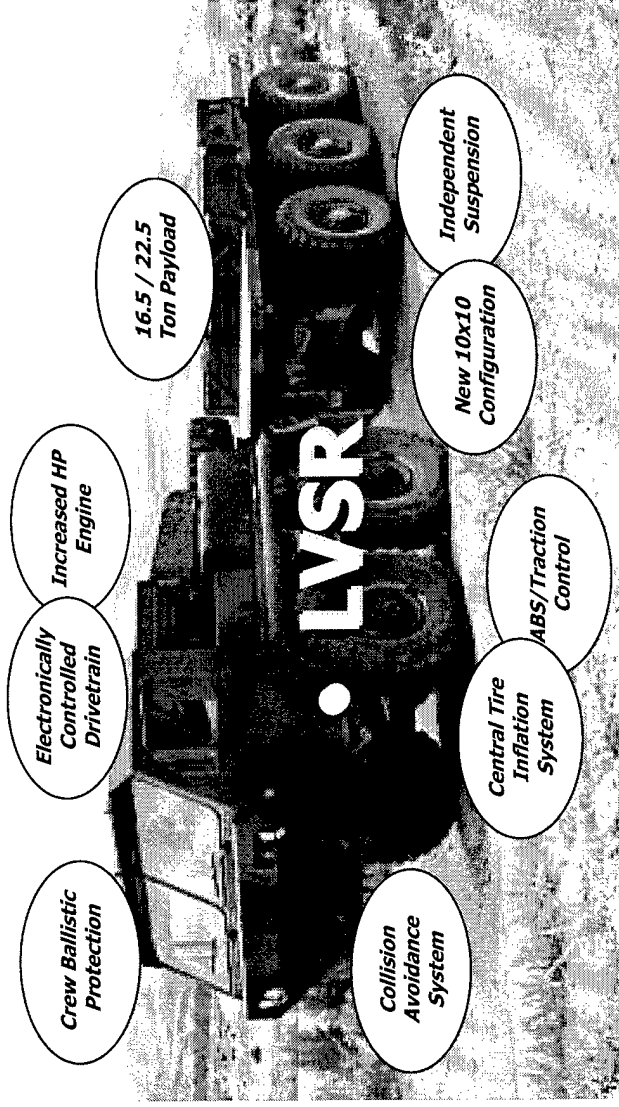
- **Medium Trailers**

- M105 / M149 / M353 Trailers
- MTVR Trailers





## Heavy Fleet



- **M870A2 Lowbed Semitrailer**
- **Tactical Fuel Transport & Refueling**
  - M970 Refueler Semitrailer
  - Aircraft Refueling Capability (ARC)
- **Commercial Tractor**



## **Special Fleet**



- ***P-19A Crash, Fire & Rescue***
- ***Heavy Equipment Transporter (70+ Ton)***
- ***Motor Transport Modification Program***



## ***Transportation Futures IPT***

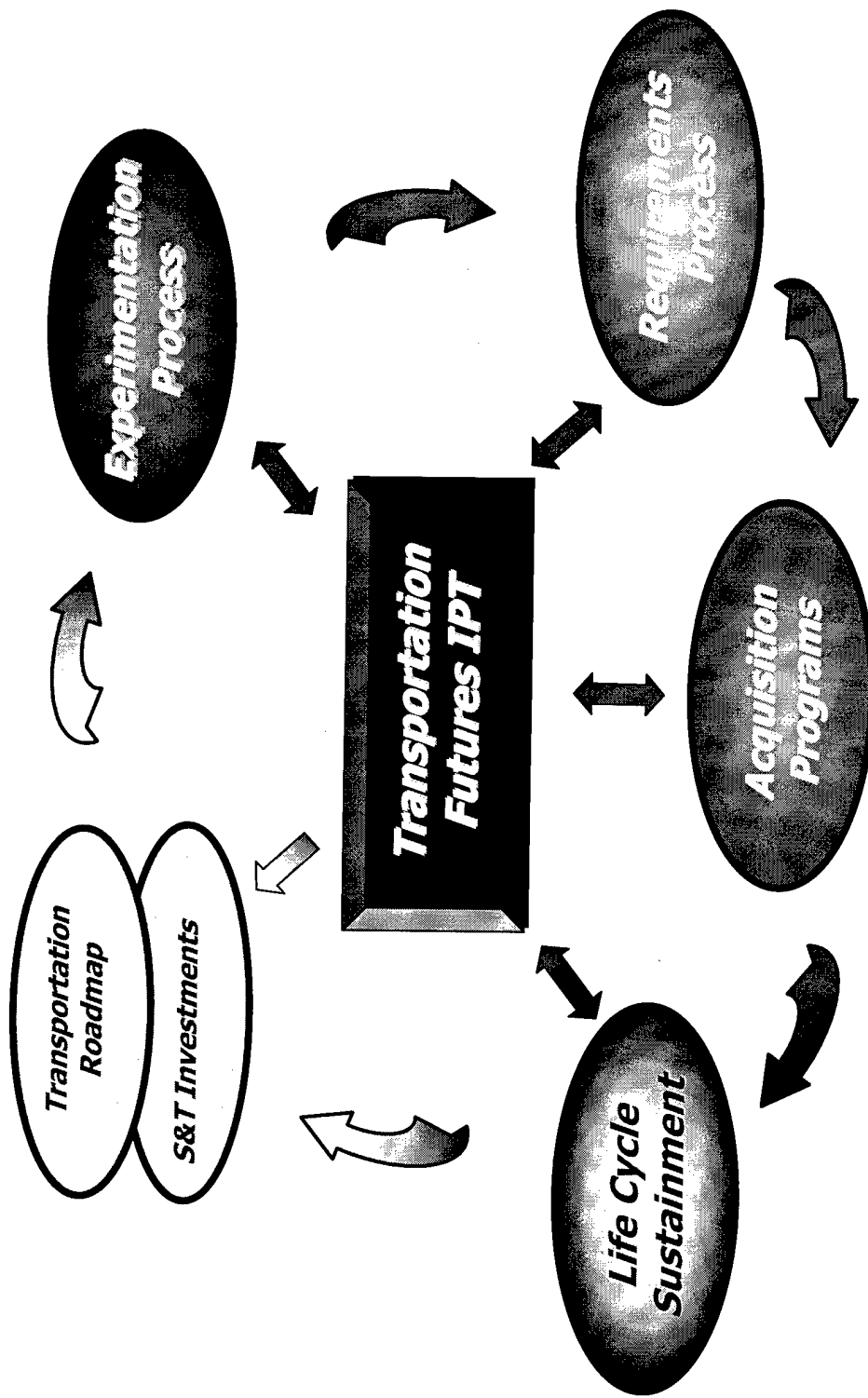
***Mission: Establish & execute a multi-disciplinary approach to addressing all the issues related to fielding the current & future fleet of transportation & distribution assets to support future Marine Corps Operations***

- ***Goals***
  - Establish, refine & reinforce transportation systems acquisition
  - Identify & analyze applicable emerging technologies
  - Examine strategies to streamline procurement & fielding
  - Identify, analyze & resolve critical programmatic issues
  - Provide historical visibility into the decision making process
- ***Meets Quarterly***

**Provide the Marine Corps Transportation "Roadmap"**

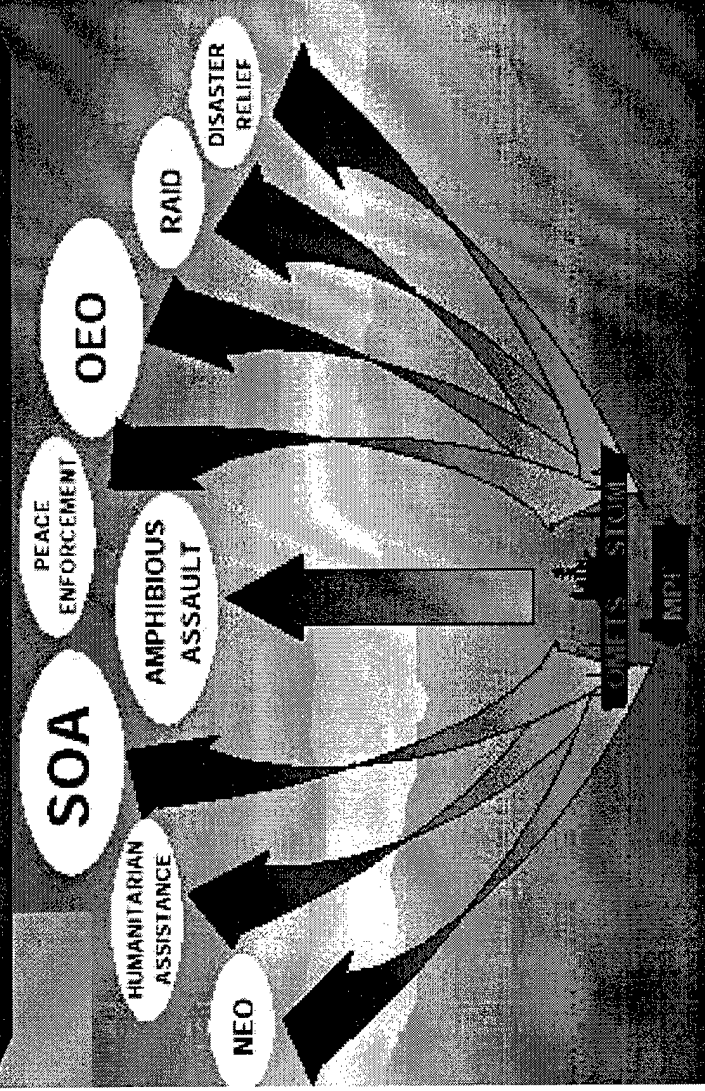


# Transportation Futures IPT





## Motor Transport & Seabased Logistics in Support of OMFTS



- Primacy of the Sea Base    Reduce or Eliminate the Footprint
- Reduced Demand    Seabased Support - Light Force Ashore
- In-stride Sustainment    Automated Logistics for Maneuver Units
- Adaptive Response    Expanded Missions - Joint Support
- Reconstitute at Sea    Build & Restore Combat Power

Combat Support & Logistics Equipment -- Marine Corps Systems Command -- Marine Corps Materiel Command

Slide 11



## *Reduce Burden of Logistics Support*

- *Precision Logistics vs Traditional Logistics Tail*
- *Logistics Support Systems That ...*
  - Use less fuel
  - Require little or no maintenance over a given period, e.g., a month
  - Can predict internal failures
  - Leverage Technology
    - Maintenance free batteries
    - Reusable filters
    - Onboard oil analysis

**Logistics Focused on Supporting Operational Forces**



## ***Reduce Total Ownership Costs***

- ***Maintenance***
  - Shorter, more responsive repair part pipelines
  - More precise repair parts accountability
  - Predictive maintenance capabilities
- ***New Technology***
  - Fewer, more reliable batteries
  - Reusable filters & Onboard oil analysis
- ***Industry Experience & Best Practices***

**Do It Cheaper By Doing It Smarter**

Slide 13



## ***Corrosion Protection***



- ***Corrosion is #1 Maintenance Problem***
  - Marine Corps environment
  - BIG impact on vehicle life
- ***Two Approaches***
  - Design into new system (*MTVR & HMMWVA2*)
  - Fixing Existing Systems
    - Less clear solutions
    - Potentially more difficult & costly than new
- ***What Is Out There & What Can Work?***

**Makes Otherwise Sound Vehicles Unserviceable**





## *Best Use of Technology*

- *What is Out There?*
- *Is It Applicable for ...*
  - Insertion into existing systems
  - Design into new systems
- *What Is Impact on TOC?*
- *Improve the Process*
  - Models & Simulation throughout System Life Cycle
  - Integrated Process & Product Development

**More Questions Than Answers**

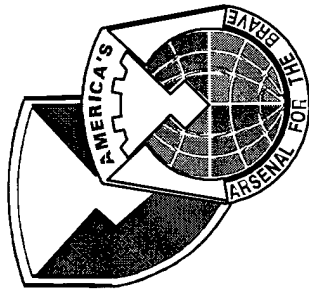
Slide 15



## ***What You Can Do***

- ***Let Us Know of Ways to Answer Challenges***
- ***Ideas for the MT Modification Line***
  - Existing Commercial Solutions versus New Design
  - Talk to Project Officers
- ***Better Ways to Facilitate ...***
  - Government - Industry Cooperation
  - Teaming

**Give Us Your Ideas for Solutions**



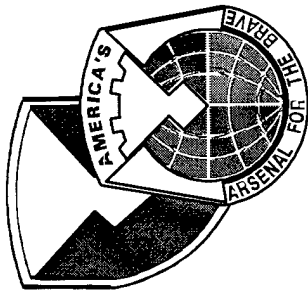
# QUALITY ASSURANCE SUBCOMMITTEE REPORT 1 FEBRUARY 1999

Briefer: Ronald Scholtes  
Date: February 1, 1999

1/4

Tank-automotive & Armaments Command

*Committed to Excellence*



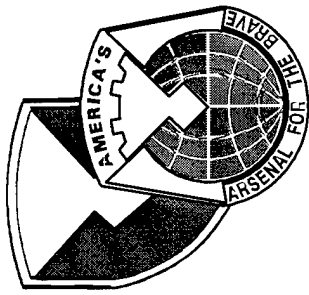
# NEW APPROACH



- MID-YEAR MEETINGS
- TESTING COMMUNITY PERSONNEL  
JOINED OUR SUBCOMMITTEE

2/4

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# AUGUST 1998

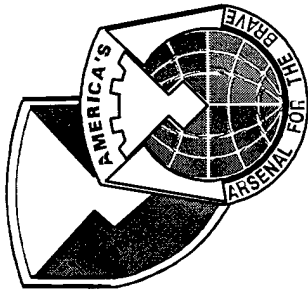
## TOPICS



- DLA POLICY FOR ISO 9000
- USING COMMERCIAL TEST STANDARDS
- ELECTRONIC DD250 PROCESS
- NATIONAL AUTOMOTIVE CENTER  
PROJECTS

3/4

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# JANUARY 1999

## TOPICS

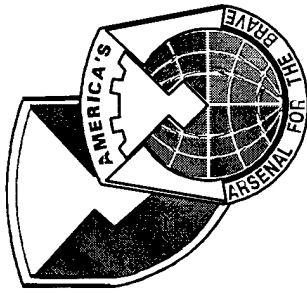


- ACQUISITION REFORM UPDATE
- CURRENT NATIONAL AUTOMOTIVE CENTER PROJECTS
- ISO 9000 PROGRAM
- CONTRACTOR PERFORMANCE CERTIFICATION PROGRAM
- ELECTRONIC DD250 PROCESS
- TESTING USING COMMERCIAL STANDARDS

4/4

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# POINTS OF CONTACT



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Commercial (219) 258-7523  
Email - [wbotich@amgeneral.com](mailto:wbotich@amgeneral.com)
- Mr. Ronald Scholtes  
TARDEC, Engineering Business Group  
Commercial (810) 574-6153  
Email - [scholter@tacom.army.mil](mailto:scholter@tacom.army.mil)



**DEFENSE SECURITY COOPERATION AGENCY:  
THE CHANGING ENVIRONMENT AND FMS RE-  
ENGINEERING**

**MR ROBERT KELTZ  
DEPUTY DIRECTOR,**

**DSCA**

**1 FEBRUARY 1999**

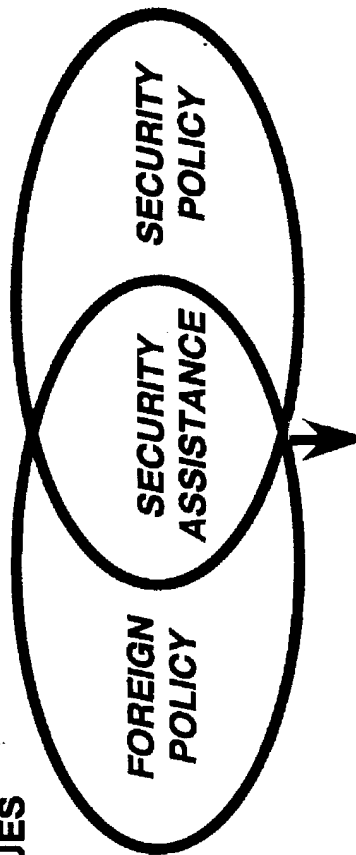


# SECURITY COOPERATION: A KEY POLICY TOOL FOR THE 21st CENTURY



- BUILD INSTITUTIONS TO  
KEEP AMERICANS SAFE AND  
THE WORLD PEACEFUL
- SUSTAIN OUR PROSPERITY  
AND EXPAND GLOBAL  
ECONOMY
- PROMOTE AMERICAN  
PRINCIPLES & VALUES

- TO ENHANCE OUR SECURITY  
WITH MILITARY FORCES THAT  
ARE READY TO FIGHT
- TO BOLSTER AMERICA'S  
ECONOMIC REVITALIZATION
- TO PROMOTE DEMOCRACY  
ABROAD



- COALITION BUILDING
- FORWARD PRESENCE
- INTEROPERABILITY
- REGIONAL STABILITY
- CRISIS MANAGEMENT
- THEATER DETERRENCE



## **MILITARY ASSISTANCE PROGRAM**



- 
- **FMS SALES = \$8.6B & FMS DELIVERIES = \$13.9B IN FY98**
  - **SALES TO 137 COUNTRIES AND INT'L ORGANIZATIONS**
  - **PIPELINE OF \$70B IN PRIOR YEAR SALES**
  - **OVER \$3B IN GRANT ASSISTANCE IN FY97 - FY99**
  - **IMET PROGRAMS OF \$50M WITH 118 COUNTRIES IN FY99**
  - **DSCA OVERSEES 15,000+ FMS CASES WORTH \$222B**
  - **DSCA MANAGES \$370M IN FY99 ADMINISTRATIVE BUDGETS**
  - **SECURITY ASSISTANCE FY98 WORK-YEARS: 5,246**
  - **712 SAOs IN OVERSEAS SA ORGANIZATIONS**



# FUNCTIONAL VIEW OF SECURITY ASSISTANCE COMMUNITY

5,246 WORK YEARS FY 98

HEADQUARTERS  
(135)

DSCA ACTIVITIES  
(167)

FIELD AGENCIES  
(578)

IMPLEMENTERS  
(3,555)

UNIFIED  
COMMANDS  
(99)

SAO'S  
(712)

DSCA I.Q.

(135)

DISAM DSAD

(50) (117)

DFAS

(578)

ARMY  
(1,180)

SAUS/IA  
USASAC

NAVY  
(765)

NIPO/NAVICP

USAF  
(1,585)

SAF/IA/A  
FSAC

OTHERS  
(25)

(NSA, NIMA,  
DIA, DISA,  
AIT)

EUCOM CENTCOM PACOM SOUTHCOM/ACOM

(27)

(26)

(17)

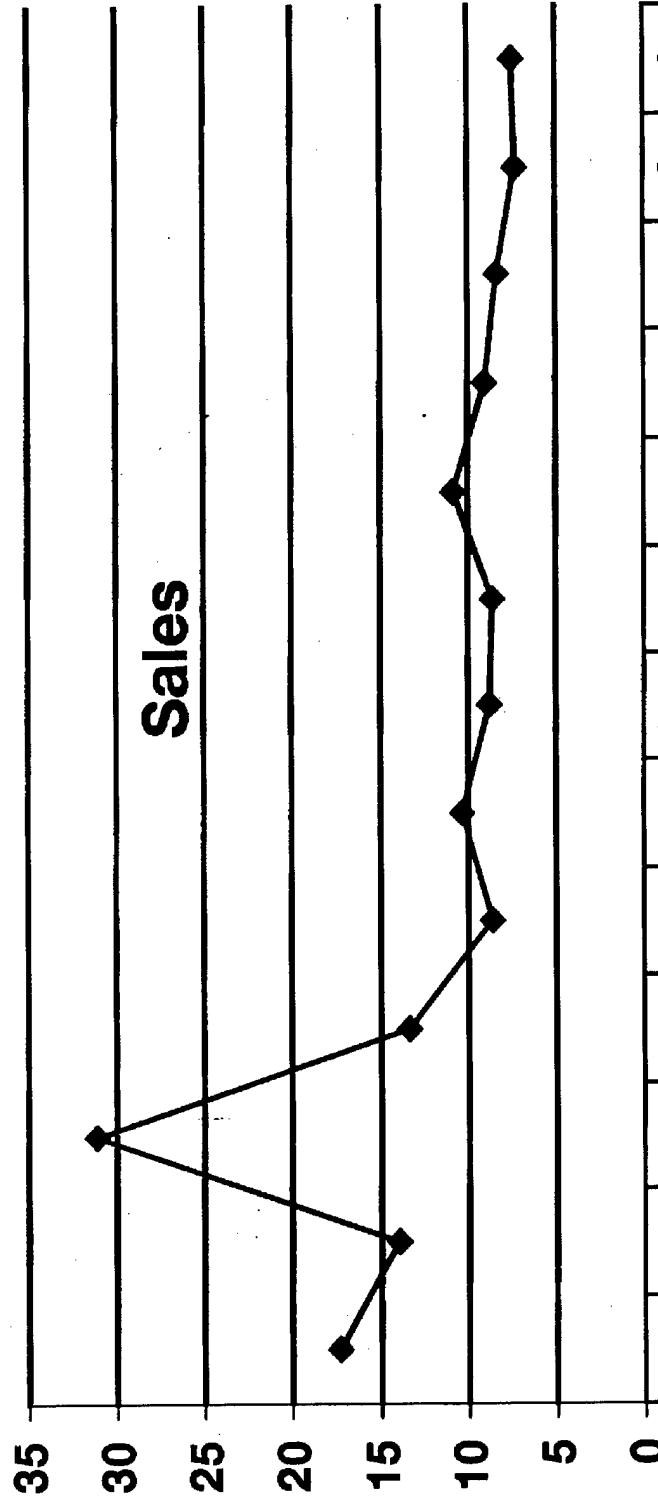
(29)

SAO PERSONNEL IN 76 COUNTRIES



# FOREIGN MILITARY SALES: WORLDWIDE SALES

\$ Billions



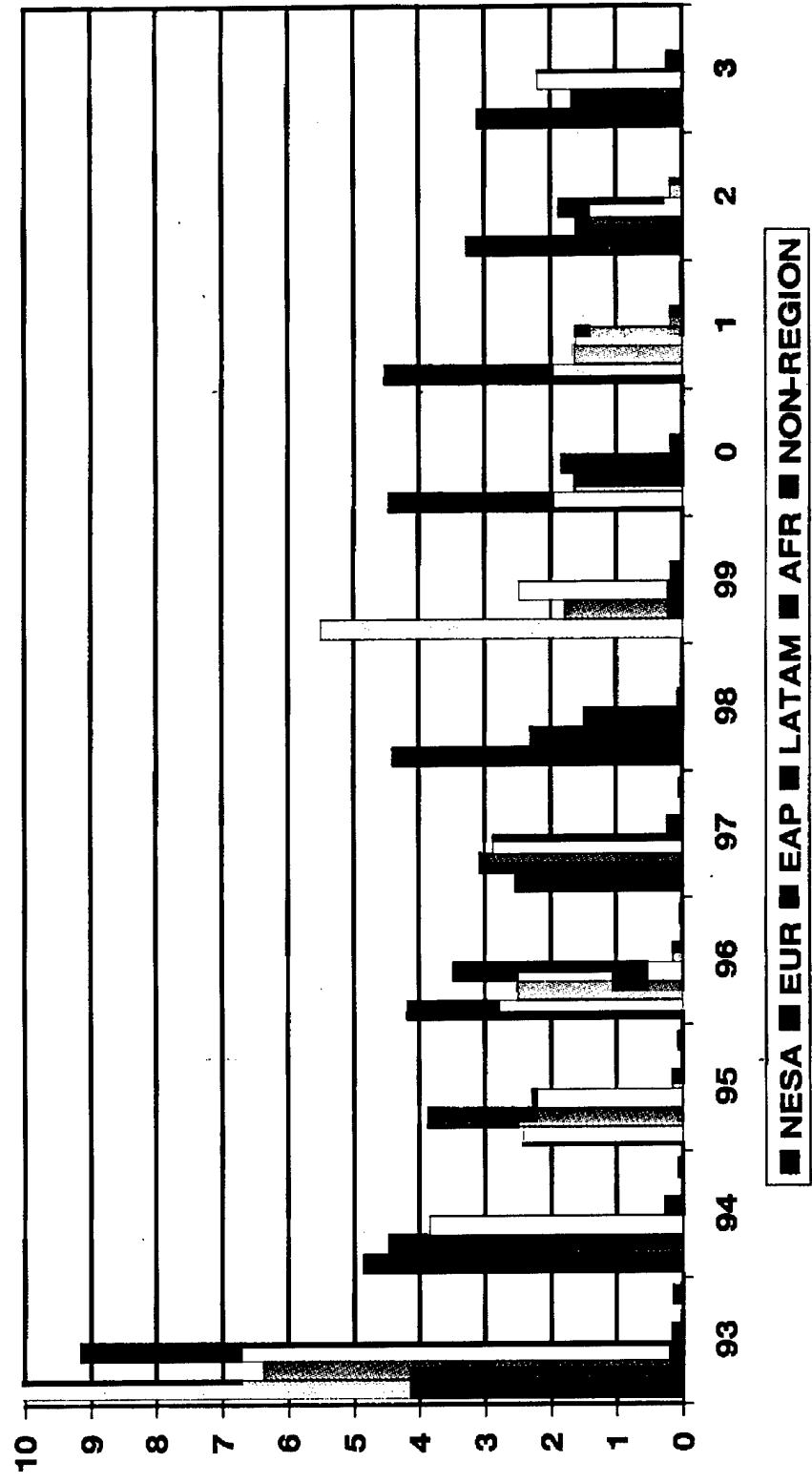
◆ Sales	91	92	93	94	95	96	97	98	99	0	1	2	3
	17.3	13.9	31.1	13.3	8.6	10.3	8.8	8.6	10.8	10.8	8.3	7.3	7.5



# FOREIGN MILITARY SALES: Regional Breakdown



(in Billions)

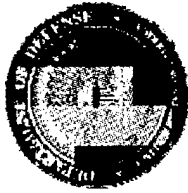




## **U.S. GOVERNMENT TACTICAL WHEELED VEHICLE SALES**



- 
- **NOT REALLY ANY NEW SALES PENDING OR ON HORIZON**
    - **SOME MINOR SUSTAINMENT CASES FOR EXISTING FLEETS**
  - **BULK OF SALES GO ON DIRECT COMMERCIAL BASIS (CUSTOMER PREFERENCE)**
  - **VARIABLES AT WORK IN MARKETPLACE THAT WE CAN'T CONTROL**
    - **DESIRE OF CUSTOMERS TO GO INDIGENOUS WHENEVER POSSIBLE**
    - **MANY VIABLE PRODUCERS**



# DSCA MAJOR EFFORTS



## External

- RE-ENGINEER THE FMS PROCESS AND MEET CUSTOMER NEEDS
- MAINTAIN SECURITY ASSISTANCE TRUST FUND SOLVENCY
- MAINTAIN SOLVENCY OF CUSTOMER TRUST FUNDS
- ENSURE CONTINUED VIABILITY OF AGENCY

## Internal

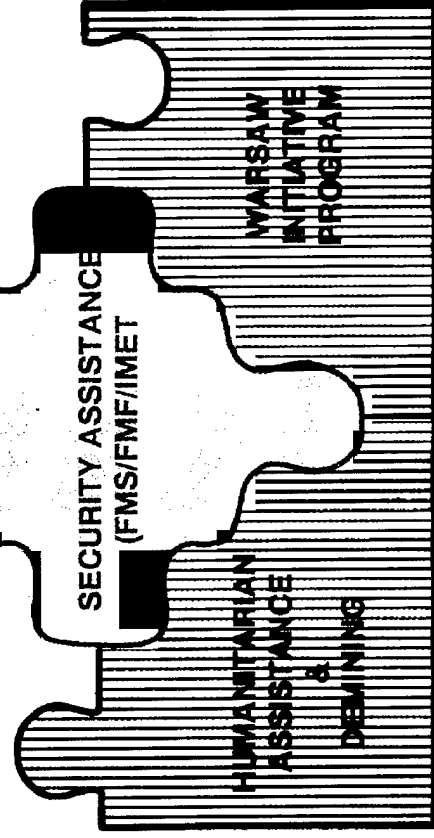
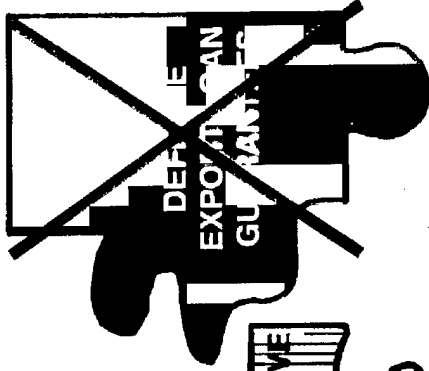
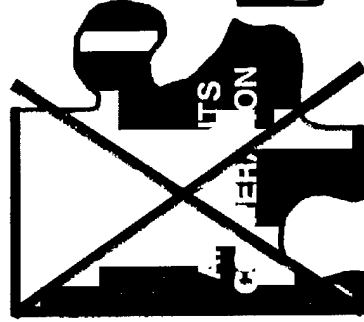
- IMPLEMENT AGENCY 5 YEAR STRATEGIC PLAN
- COMPLETE AGENCY'S BUSINESS PERFORMANCE PLAN FOR DEFENSE MANAGEMENT COUNCIL
- DEVELOP & FIELD DSAMS



## FUNCTIONS ACQUIRED UNDER DEFENSE REFORM INITIATIVE



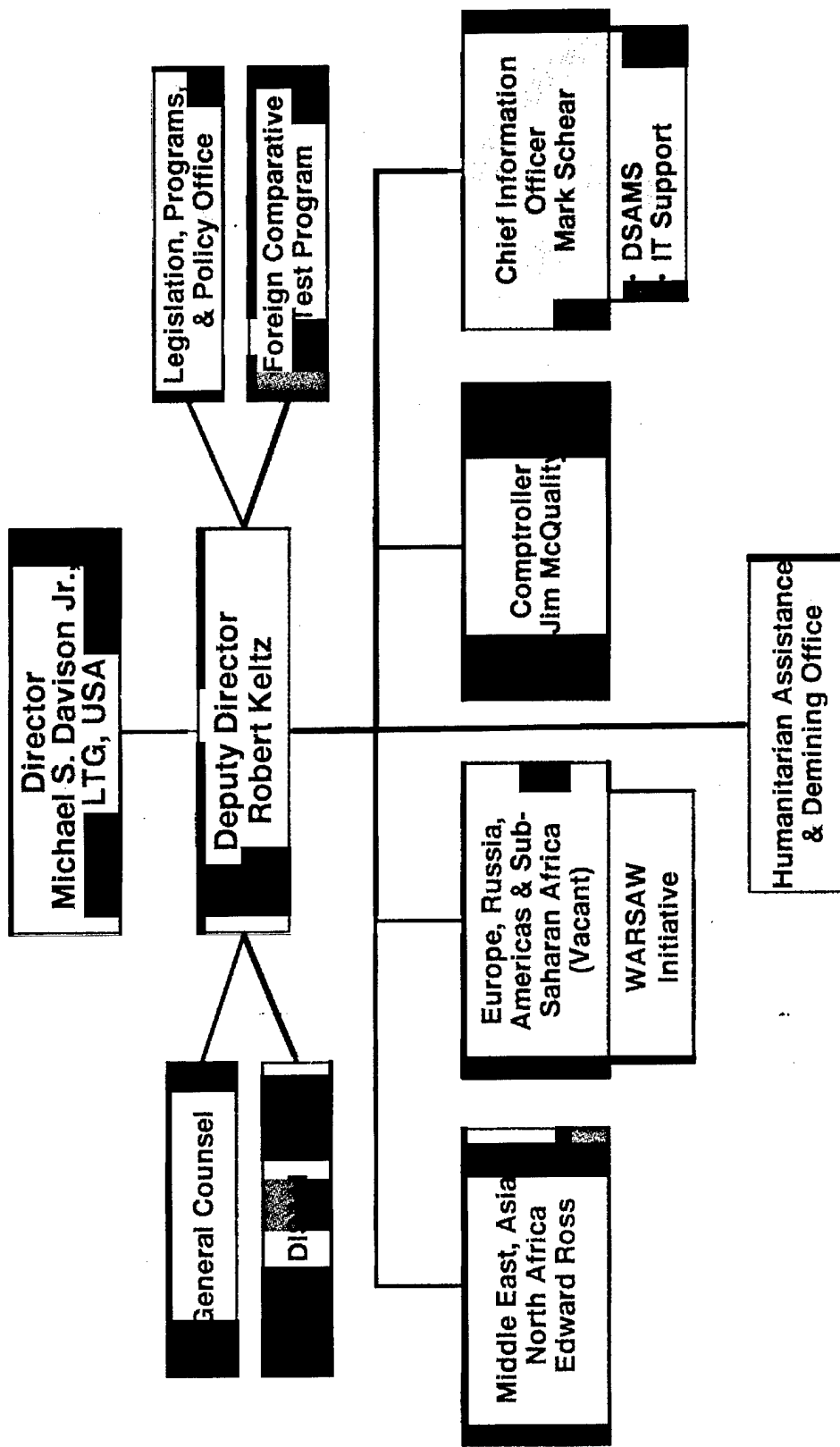
- HA/D PROGRAMS  
TRANSFERRED TO DSCA -  
MARCH 1998
- WARSAW INITIATIVE (PFP)  
PROGRAM MANAGEMENT  
FUNCTIONS - AUG 98
- FOREIGN COMPARATIVE  
TEST PROGRAM - AUG 98
- INTERNATIONAL  
ARMAMENTS  
COOPERATION/DEFENSE  
EXPORT LOAN  
GUARANTEE PROGRAM -  
NOT COMING TO DSCA







# DEFENSE SECURITY COOPERATION AGENCY (DSCA)





## **AGENCY STRATEGIC PLANNING**



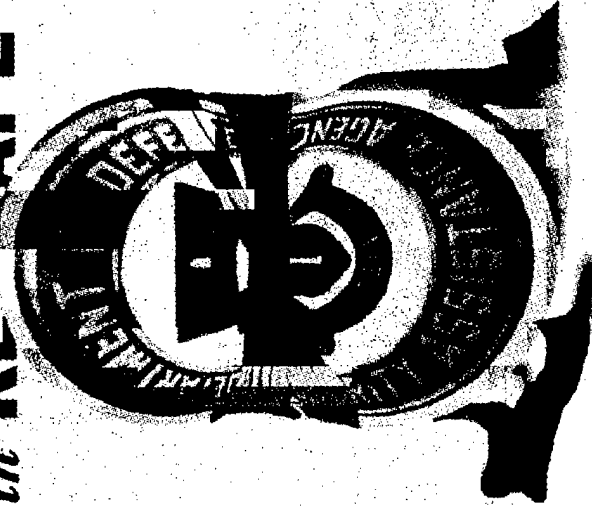
- 
- **RESPONDS TO THE GOVERNMENT PERFORMANCE AND RESULTS ACT**
  - **DEPSECDEF DIRECTION REQUIRES PERFORMANCE CONTRACTS FOR ALL DEFENSE AGENCIES**
  - **PLAN SETS SPECIFIC, MEASURABLE PERFORMANCE OBJECTIVES FOR DSCA**
    - **BASIS FOR PERFORMANCE CONTRACT BETWEEN DSCA DIRECTOR AND THE DEPSECDEF**
    - **WILL BE PART OF THE DSCA ANNUAL PROGRAM OBJECTIVE MEMORANDUM (POM) SUBMISSION**



# RE-ENGINEERING THE FMS SYSTEM



## WRAPPED *in* REETAPE



***Customers Abandon FMS;  
Cite High Cost, Inflexibility***

- FMS SYSTEM FACING CHALLENGES
- INDUSTRY WANTS MORE FROM FMS SYSTEM
  - RAPID POLICY DECISIONS
  - STRONGER ADVOCACY
  - MORE SUPPORT FOR SALES EFFORTS
- MAJOR CUSTOMERS WANT:
  - GREATER PARTICIPATION
  - SHORTER TIMELINES
  - FASTER RELEASE APPROVALS
  - FEWER SURCHARGES



# DEVELOPING A CONSENSUS FOR CHANGE



AIA ABA

OSD STAFF

NAVY

DSCA

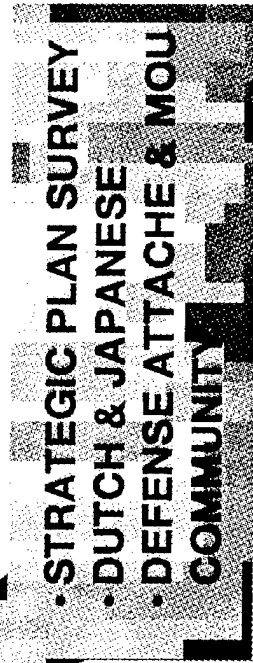
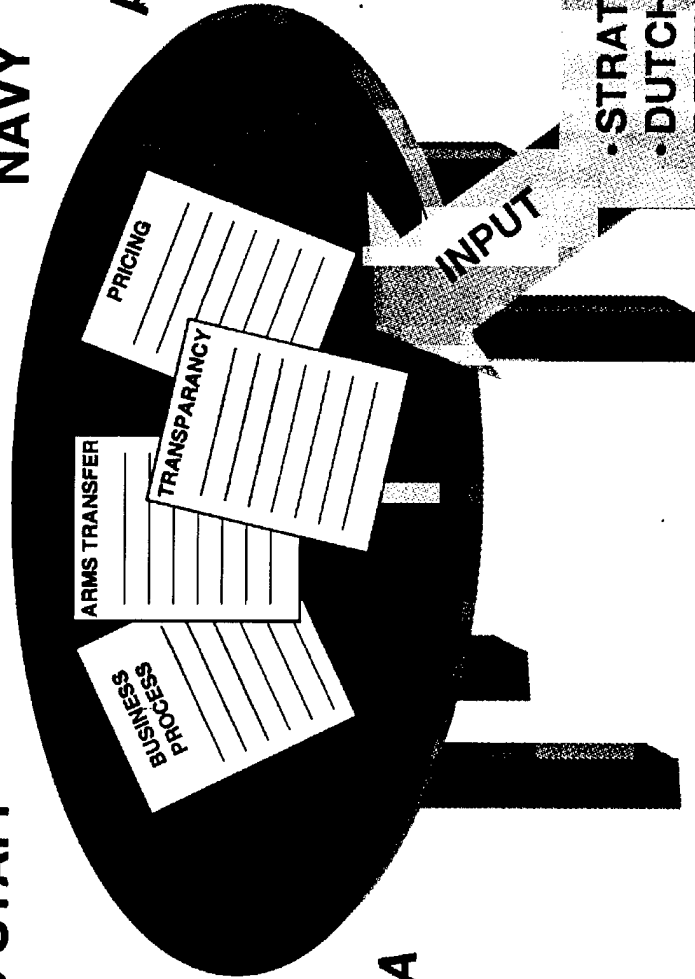
NDIA

AIR FORCE

DLA

ALESA

ARMY





# NEEDED ACTIONS

## TRANSPARENCY\*

(9 & 23 NOV)

- RELATIONSHIP WITH INDUSTRY
- LOA PREPARATION
- CONTRACT PREPARATION

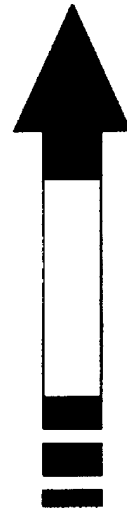


- RELATIONSHIP WITH INDUSTRY POLICY MEMO\*
- DSCA POLICY MEMO
- FOREIGN CONTRACTING POLICY MEMO

## PRICING, COST RECOVERY\*

(18 NOV & 9 DEC)

- NTE/FFP LOAs
- ADJUST FMS SURCHARGES
- USG COST RECOVERY
- ALTERNATIVES TO DFAS/DCMC



- LEGISLATIVE CHANGE
- ACTIVITY BASED COSTING ANALYSIS
- LEGISLATIVE CHANGE
- POSSIBLE OUTSOURCING

\* Presented to DPACT 26 Jan 99



## NEEDED ACTIONS

### TECH TRANSFER

(30 NOV & 14 DEC)

- ARMS TRANSFER POLICY REVIEW GROUP
- IMPROVE BUREAUCRATIC PROCESS
- FOREIGN DISCLOSURE



- ATRPG POLICY MEMO (18 DEC 98)\*
- POSSIBLE ITAR REVISIONS
- ASSESSMENT OF INFORMATION RELEASE CRITERIA
- USDP/POLICY ON ACCESS

### METRICS/PROCESS RE-ENGINEERING

(18 DEC)

- DEVELOP PERFORMANCE MEASURES
- RE-ENGINEER ENTIRE SECURITY COOPERATION PROCESS



- METRICS EFFORT BEGUN (OCT 98)
- CONTRACTOR SUPPORT IMPLEMENTED

\* Presented to DPACT 26 Jan 99



## CURRENT ACTIVITIES

---

- 8 JAN - FINAL COORDINATION WITH  
INDUSTRY ON 1ST TWO WHITE  
PAPERS
- 11 JAN - DPACT COORDINATION
- 26 JAN - DPACT
- 8 FEB - MEET WITH MILDEPS TO  
COORDINATE RE-INVENTION  
EFFORTS



# **COMPLETING REMAINING GROUNDWORK**

---

## **TWO WHITE PAPERS TO BE FINISHED**

- **ARMS TRANSFER & TECHNOLOGY/DATA RELEASE**
  - **DSCA AND DUSD(PS) COOPERATIVELY REWRITE PAPER**
  - **VET PAPERS THROUGH DoD COMMUNITY AND INDUSTRY**
  - **TARGET COMPLETION DATE 15 MARCH**
- **METRICS & PROCESS RE-ENGINEERING**
  - **PAPER BEING CO-DEVELOPED WITH MILDEPS AND DLA**
  - **TARGET COMPLETION DATE 29 MARCH**





# THE FUTURE



- 
- SECURITY COOPERATION REFLECTS ON USG AND DEMONSTRATES COMMITMENT TO SECURITY NEEDS OF OUR FRIENDS AND ALLIES
  - SECURITY COOPERATION WILL CONTINUE TO BE AN IMPORTANT TOOL FOR POLICY MAKERS
  - WE CAN EXPECT:
    - CONTINUED SCRUTINY OF FOREIGN AID REQUESTS
    - CONTINUED PRESSURE TO REDUCE MANPOWER RESOURCES
    - INCREASED COMPETITIVE MARKET FOR SMALLER DEFENSE BUDGETS



## AGENCY VISION

---

TO BE THE PREMIER AGENCY RECOGNIZED AND RESPECTED FOR LEADERSHIP, EXPERTISE, INNOVATION, AND RESULTS IN SECURITY COOPERATION...

- A HIGHLY QUALIFIED TEAM OF MOTIVATED PROFESSIONALS
  - VITAL TO SUPPORTING US INTERESTS AND SECURITY RELATIONSHIP
  - THE INTERNATIONAL PARTNER OF CHOICE
- ...MASTERING THE CHALLENGES OF A CHANGING GLOBAL ENVIRONMENT.

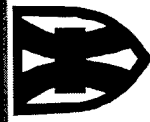
***Decisive***

***Supportive***

***Committed***

***Accessible***

**21ST TAACOM**



# **UPDATED USAREUR HAZARDOUS MATERIEL HANDLING REQUIREMENTS**

***HOW DOES IT AFFECT FLEET READINESS?***



# **21ST TAACOM**

## **AGENDA**



- **BACKGROUND**
- 
- **ISSUES**
- **HAZMAT DRIVER'S LICENSING REQUIREMENTS**
- **HAZMAT UNIT SAFETY OFFICER REQUIREMENT**
- **HAZMAT TRANSPORTATION WAIVERS**
- **JOINT VEHICLE INSPECTION**
- **ANNUAL B3 VEHICLE CERTIFICATION**
- 
- **CONCLUSIONS**



## 21ST TAACOM



### BACKGROUND

- MARCH 1998 - SUPPLEMENTAL AGREEMENT TO SOFA GOES INTO EFFECT
- AUTHORIZES NATO HOST NATIONS TO ENFORCE COMPLIANCE WITH LOCAL ENVIRONMENTAL AND HAZMAT REGULATIONS AND LAWS BY U.S. FORCES STATIONED IN EUROPE
- U.S. FORCES UNABLE TO IMMEDIATELY COMPLY WITH EUROPEAN REGULATIONS AND LAWS
- U.S. FORCES FORCED TO ADOPT "PHASE-IN" COMPLIANCE

# 21ST TAACOM



## ISSUES

- WAIVER OF REQUIREMENTS PREVENTING U.S. FORCES FROM TRANSPORTING HAZMAT OVER EUROPEAN HIGHWAYS
- CONDUCT USAREUR AND GERMAN FEDERAL MINISTRY OF TRANSPORT JOINT VEHICLE INSPECTION
- WAIVER OF REQUIREMENT FOR ANNUAL B3 VEHICLE CERTIFICATION

## 21ST TAACOM



### HAZMAT DRIVER'S LICENSING REQUIREMENTS

- EFFECTIVE 1 JANUARY 1999, ALL U.S. TRANSPORTERS (MILITARY AND CIVILIAN) OF HAZMAT IN EUROPE ARE REQUIRED TO BE LICENSED IAW ACCORD EUROPEEN RELATIF AU TRANSPORT DES MATIERES DANGEROUSE PAR ROUTE (ADR)
- TO MEET THIS REQUIREMENT, USARERUR WILL:
  - MAXIMIZE USE OF HAZMAT 11 COURSE, VILSECK, GERMANY
  - MAXIMIZE USE OF MACOM DRIVER'S ACADEMIES
  - EMPLOY MOBILE TRAINING TEAMS

## 21ST TAACOM

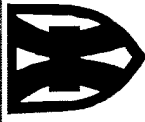


### HAZMAT UNIT SAFETY ADVISORS

- EFFECTIVE 1 JANUARY 2000, ALL U.S. FORCES, DETACHMENT SIZE AND LARGER, ARE REQUIRED TO HAVE AT LEAST ONE UNIT SAFETY ADVISOR TRAINED AND CERTIFIED IAW ADR
- UNIT SAFETY ADVISOR IS RESPONSIBLE AND PERSONALLY LIABLE FOR TRANSPORTATION OF HAZMAT
- USAREUR IS DEVELOPING ALTERNATIVE COURSES OF ACTION FOR THE TRAINING AND CERTIFICATION OF UNIT SAFETY ADVISORS



## 21ST TAACOM



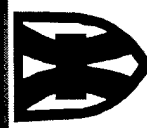
### JOINT VEHICLE INSPECTION

• SEPTEMBER 1998 - USAREUR AND GERMAN FEDERAL MINISTRY OF TRANSPORT CONDUCTED A JOINT VEHICLE INSPECTION

• PRELIMINARY RESULTS:

- MECHANISM TO LIMIT VEHICLE TOP SPEED
- TANKERS REQUIRE SWITCH TO DISCONNECT VEHICLE BATTERY
- VEHICLES REQUIRED TO HAVE NON-FLAMMABLE TARPS AND CANVASES
- SHIELDING REQUIRED AROUND ALL WIRING
- TANKERS MUST BE DOUBLE WALLED AND SPECIALLY REINFORCE
- VEHICLES REQUIRED TO HAVE ABS

## 21ST TAACOM



### JOINT VEHICLE INSPECTION (CONT'D)

- USAREUR STILL AWAITING OFFICIAL INSPECTION RESULTS
- USAREUR HAS NOTIFIED TACOM OF INSPECTION AND PRELIMINARY RESULTS FOR FUTURE VEHICLE MODIFICATION AND PROCUREMENT REQUIREMENTS
- FUTURE ACTIONS DEPENDENT UPON GERMAN MINISTRY OF TRANSPORT RECOMMENDATIONS
- WILL REQUEST WAIVER OF CURRENT DEFICIENCIES; FUTURE PROCUREMENTS MUST MEET ADR STANDARDS

# 21ST TAACOM



## HAZMAT WAIVERS

- DECEMBER 1998 - USAREUR SUBMITTED 18 WAIVER REQUESTS TO ALLOW U.S. FORCES TO CONTINUE TRANSPORTATION OF HAZMAT
- WAIVER REQUESTS VARY FROM OPERATIONAL PROCEDURES TO VEHICLE OWNER IDENTIFICATION ON THE VEHICLE TO VEHICLE ROUTE DETERMINATION
- ALL WAIVERS INITIALLY APPROVED; AWAITING FINAL CONFIRMATION FROM FEDERAL MINISTRY OF TRANSPORT
- TRANSPORT OF HAZMAT CONTINUES UNTIL 30 JUNE 1999 WHEN FINAL CONFIRMATION MUST BE RECEIVED

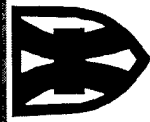
## 21ST TAACOM



### ANNUAL B3 VEHICLE CERTIFICATION

- ADR REQUIRES ANNUAL MECHANICAL INSPECTION AND CERTIFICATION OF ALL VEHICLES DESIGNATED TO TRANSPORT HAZMAT
- USAREUR IS REQUESTING WAIVER OF THIS REQUIREMENT
- USAREUR IS DEVELOPING A PROGRAM TO INSPECT AND CERTIFY THESE VEHICLES IN THE EVENT OF WAIVER DENIAL

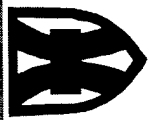
# 21ST TAACOM



## CONCLUSIONS

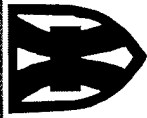
- GOAL IS TO CONTINUE TO WORK ON ADR COMPLIANCE
- SHORT TERM SOLUTION - WAIVE THOSE REQUIREMENTS WHICH ARE NOT IMMEDIATELY ATTAINABLE
- LONG TERM SOLUTION - MODIFY FLEET TO COMPLY WITH ADR STANDARDS

**21ST TAACOM**



# **FUTURE TACTICAL WHEELED VEHICLES**

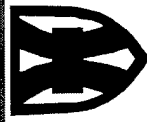
# 21ST TAACOM



## AGENDA

- MISSION REQUIREMENTS
- 
- FUNCTIONAL REQUIREMENTS
- 
- ORGANIZATIONAL STRUCTURES
- 
- INDUSTRY SUPPORT
-

# 21ST TAACOM



## MISSION REQUIREMENTS

AIR DEPLOYABLE

LONGER  
DISTANCES  
SUPERHIGHWAYS  
TO  
MUDDY FIELDS

TACTICAL  
WHEELED  
VEHICLES

MISSION  
REQUIREMENTS

SUPPLIER  
TO SOLDIER  
CONTAINER  
HANDLING

INTEGRAL LOADING AND UNLOADING

14



# 21ST TAACOM

## FUNCTIONAL REQUIREMENTS

MEETS  
WORLD WIDE  
REGULATIONS

IN TRANSIT  
VISIBILITY

INCREASED  
VELOCITY

CREW  
PROTECTION

MODULAR

DECREASED SUPPORT COSTS

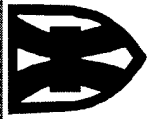
INCREASED OPTEMPO

FLEXIBLE

MATERIEL INVENTORY IN TRANSIT TO NEED

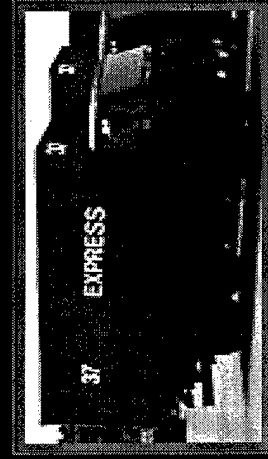
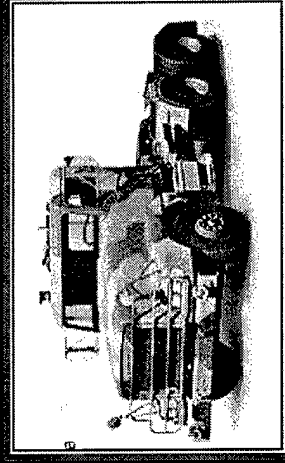
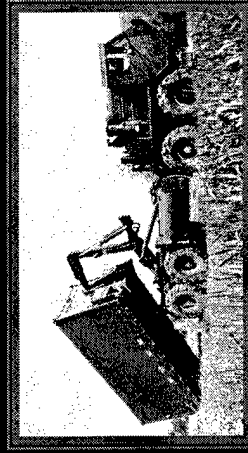
15

# 21ST TAACOM



## ORGANIZATIONAL STRUCTURES

- MODULAR
- VARIETY OF CAPABILITY
- FLEXIBLE
- EXPRESS SERVICE
- MULTI-CAPABLE DRIVERS
- SIMPLIFIED LOGISTICS



# 21ST TAACOM

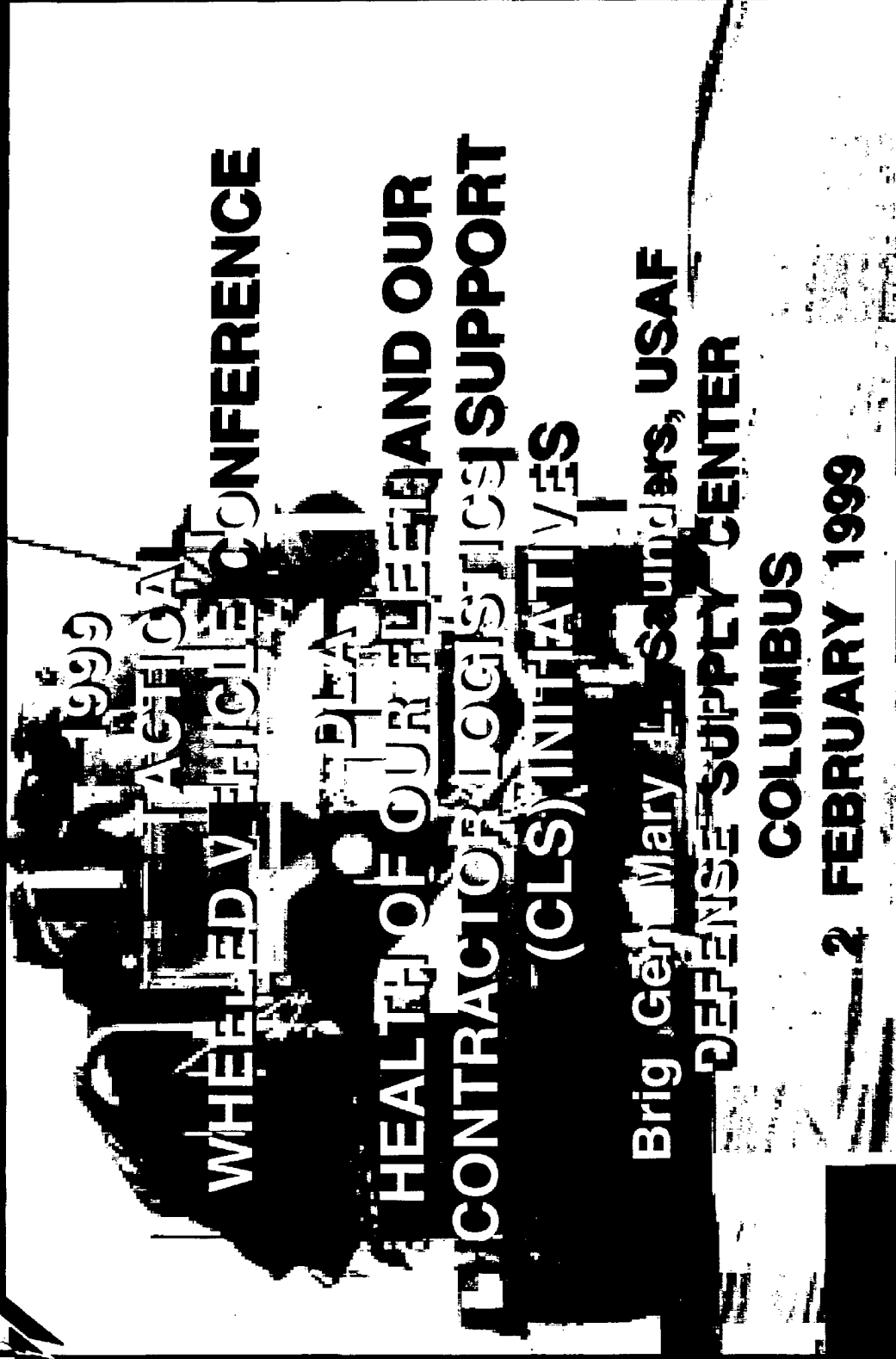
## INDUSTRY SUPPORT

- USE PROVEN TECHNOLOGY
- CASH IN ON COMMERCIAL DEVELOPMENTS
- LESS FUNDING FOR LOGISTICS
- VEHICLES MUST PASS WORLD WIDE REQUIREMENTS
- FEWER TRANSPORTATION NODES
- INCREASED USE OF CONTAINERS
- NEED MORE INTEGRATED AND INDEPENDENT MHE

DEFENSE LOGISTICS AGENCY



Defense Logistics Agency  
America's Logistics Combat Support Agency



1999  
WHEN THE VEHICLES CONFERENCE  
HEALTH OF OUR FLEET AND OUR  
CONTRACTOR LOGISTICS SUPPORT  
(CLS) INITIATIVES

Brig Gen Mary L. Saunders, USAF  
DEFENSE SUPPLY CENTER

COLUMBUS

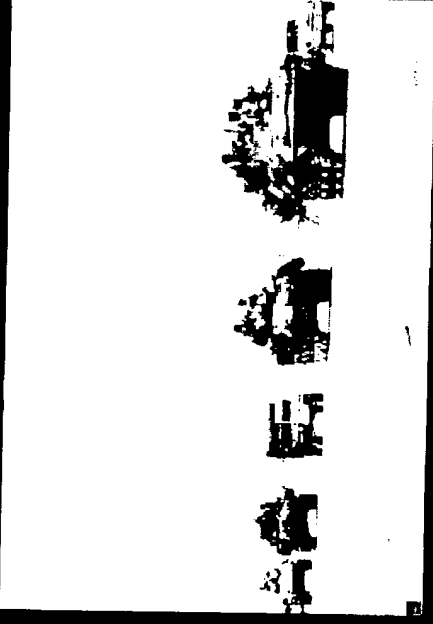
2 FEBRUARY 1999

DEFENSE LOGISTICS AGENCY



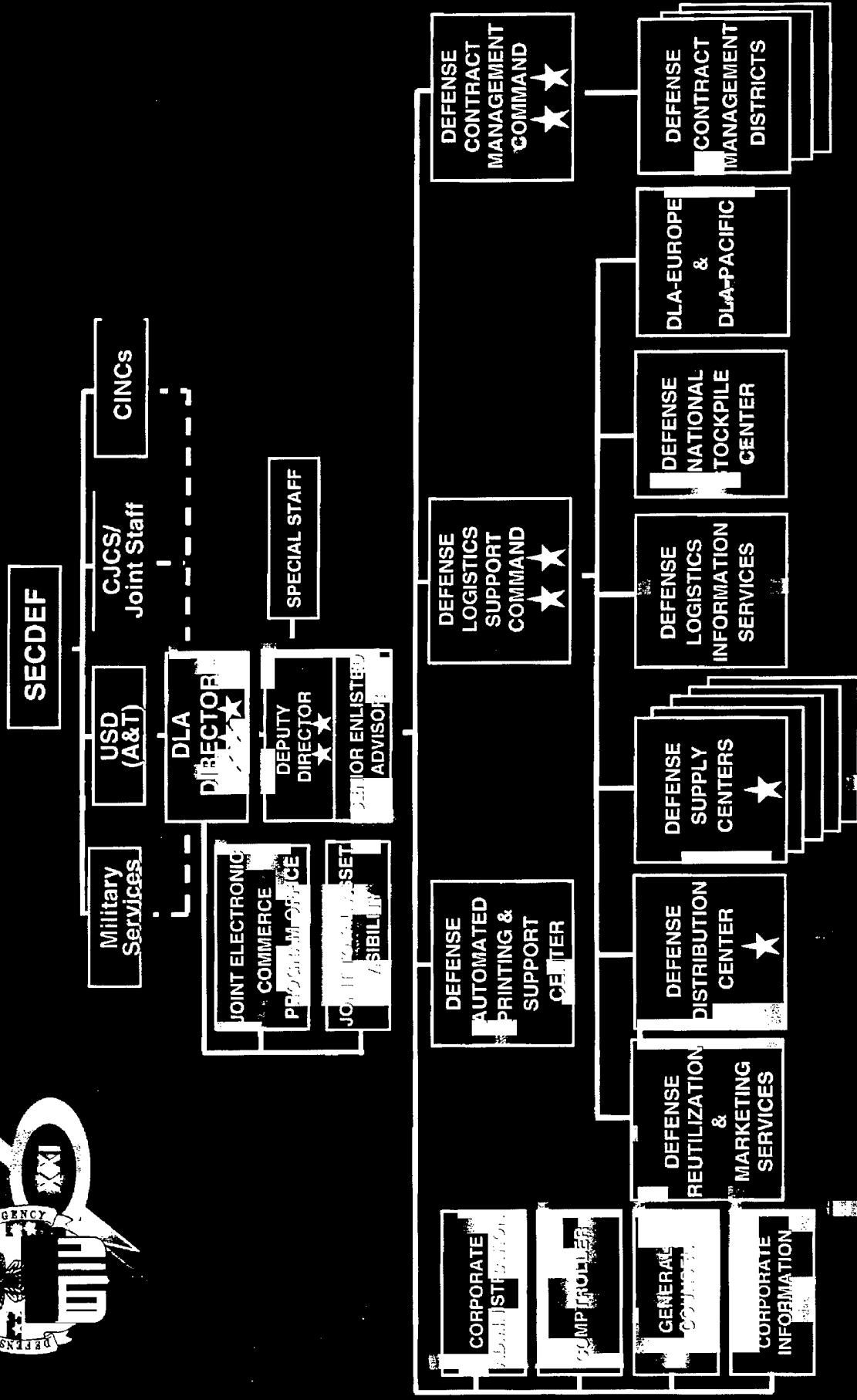
DLA

- WHO WE ARE
- HOW WE DO BUSINESS
- HOW WE MEASURE HEALTH / SUCCESS
- CLS INITIATIVES
- SUMMARY





# Where We Fit



DEFENSE LOGISTICS AGENCY



DLA

## OUR MISSION...

To provide acquisition and  
logistics support  
to America's Armed Forces  
in peace and war--around  
the clock, around the world.

## VISION...

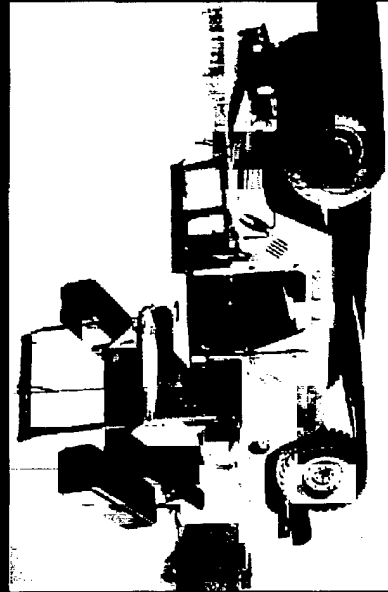
To be America's logistics  
combat support agency...  
the warfighter's partner  
for integrated life cycle  
solutions through teamwork  
and trust.





# OUR STRATEGIC GOALS

1. Consistently provide *responsive*, best value supplies and services to our customers.
2. Serve as a *catalyst* for the Revolution in Business Affairs and Acquisition Reform.
3. Ensure our workforce is enabled to deliver and sustain *world class* performance.
4. Rapidly *exploit* technology to provide agile, responsive, interoperable solutions.
5. Aggressively pursue *partnerships* with industry and our suppliers.



"We must have a logistics system which tailors what we provide to *customer* requirements - not what is convenient for us - and does so in dramatically reduced time frames, reliably and consistently."





# Preparing for the Future What Does the DLA Strategic Plan Do?

- **Right Focus**
  - On Warfighter Readiness & Capability
  - Ties DoD Goals and Direction to the Workplace
- **Right Size**
  - Major Infrastructure Changes
- **Right Enablers**
  - Business Process Change
  - Smaller, Multi-skilled Workforce
  - Acquisition Refc n
  - a ships with Customers and Industry
  - Information Technology
- **Linked to POM**



# Defense Logistics Support Command

1394 Weapon Systems  
Supported

- \$11.6B Inventory
- \$12B Annual Sales
- \$25M Annual Reutilization/  
Disposals
- \$27M Receipts and Issues  
annually
- All DoD Wholesale  
Inventories

## Functions:

- Supply Management
- Procurement
- Distribution
- Logistics Information  
Management Support
- Stockpile Management  
Reutilization Marketing
- Energy Support  
Management

## Activities

- Defense Supply Centers
- Defense Reutilization  
& Marketing Service
- Defense Distribution  
Center
- Defense National  
Stockpile Center
- Defense Logistics  
Information Service
- DLA Europe
- DLA Pacific



# DLA: An Integral Part of the Warfighting Team

Category	PE	J	O	PROVIDER	SERVICES	DL
I						
II						
III						
IV						
V						
VI						
VII						
VIII						
X						
XI						
Subsistence						100%
Clothing, Footwear						100%
Bulk Fuel						100%
Pkg POL						100%
Ammo					100%	
Comfort Items						100%
End Items					100%	
Medical						100%
Reparables					100%	
Non Reparables					4%	96%
Energy						100%
Log Info					10%	90%
Reutilization					10%	90%



# DLA Where We Are

## Wholesale

Defense Supply Center  
Philadelphia & DISC  
LEAD CENTER  
TROOP & GEN SUPPLY

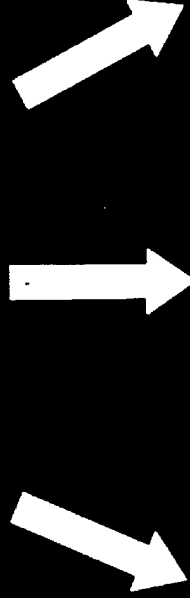
Defense Supply  
Center  
Columbus OH  
LEAD CENTER  
LAND & SEA

Defense Supply Center  
Richmond VA  
LEAD CENTER  
AVIATION

Defense Energy Support  
Center - Ft. Belvoir VA

## Retail

1995  
12 Customer Assistance Reps

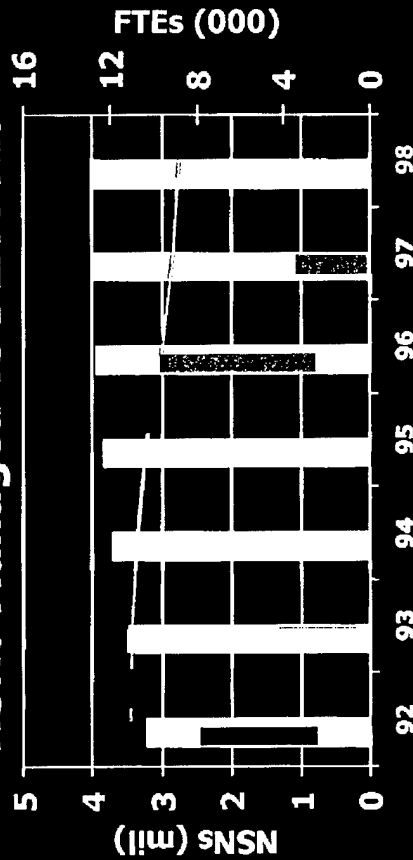


1999  
71 Customer Support Reps  
CONUS/OCONUS  
At Major Activities

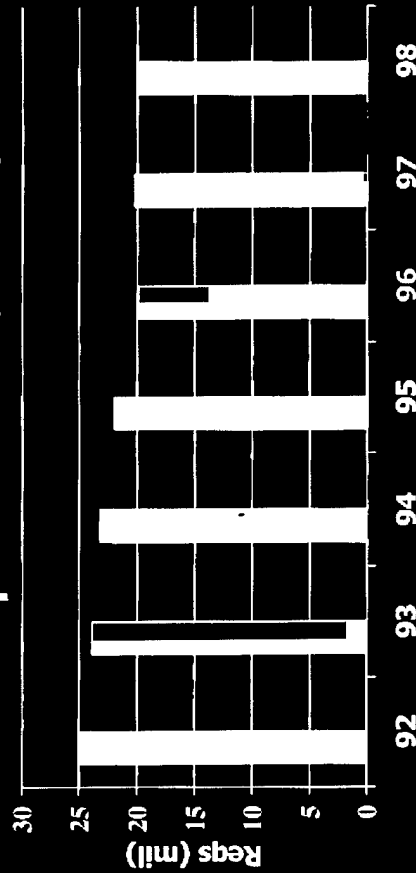


# Volume - - ICP Workload (Non - Energy)

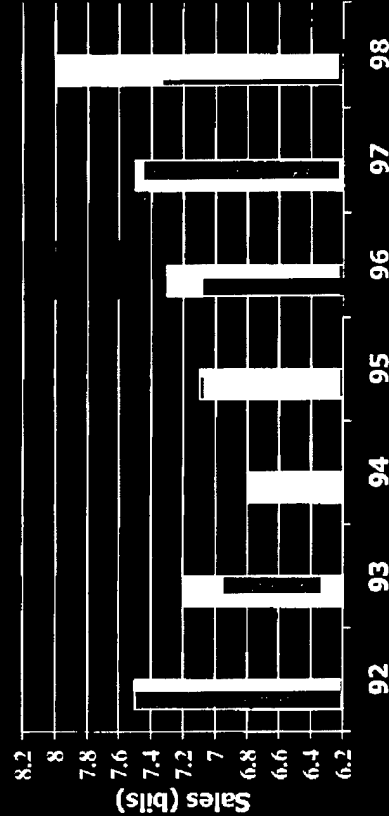
NSNs Managed vs DLA FTEs



Requisitions Processed



Gross Sales

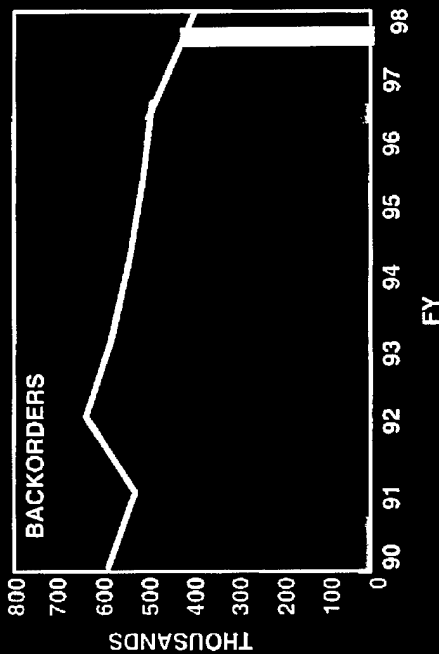


Fortune 500 -  
DLSC Ranks 92d  
\$14.3 Billion



# System Performance

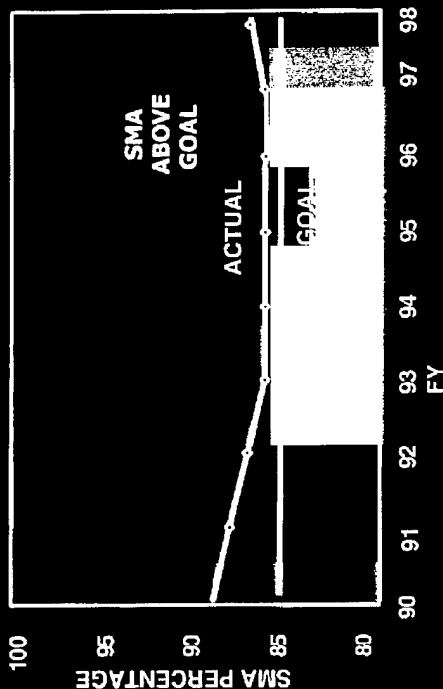
## Backorders



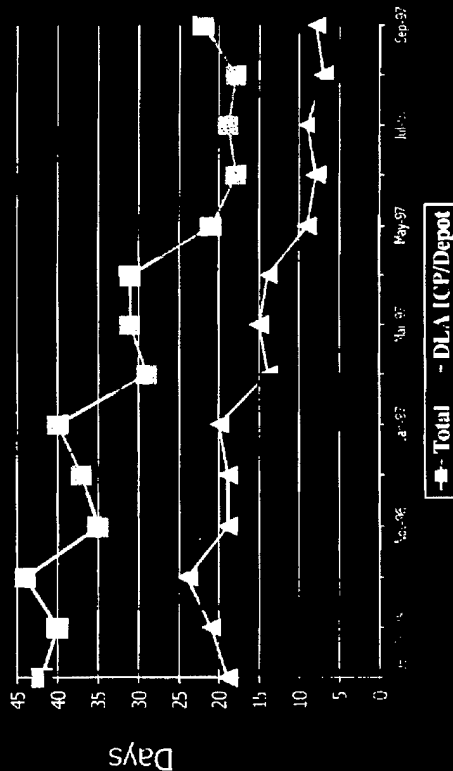
Line Items Transferred from the Services--  
1992-1995: 763K  
1996-1998 : 152K

Internal Realignment--  
1996-1999: 650K

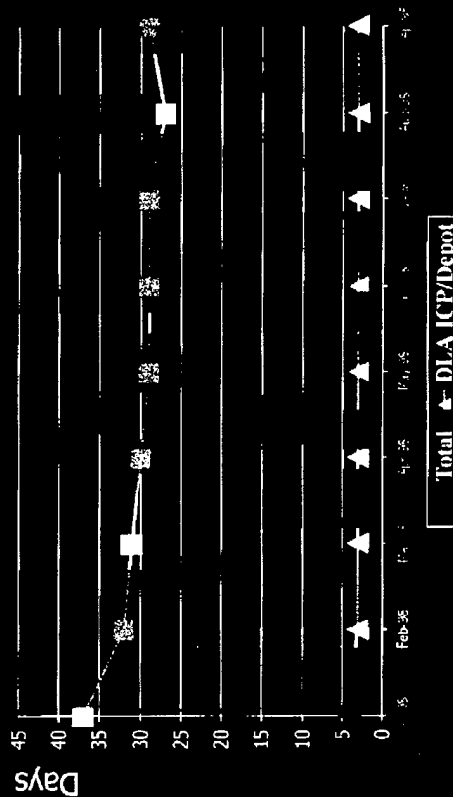
## Supply Materiel Availability (SMA)



## Logistics Response Time



## Logistics Response Time - With (LMARS)

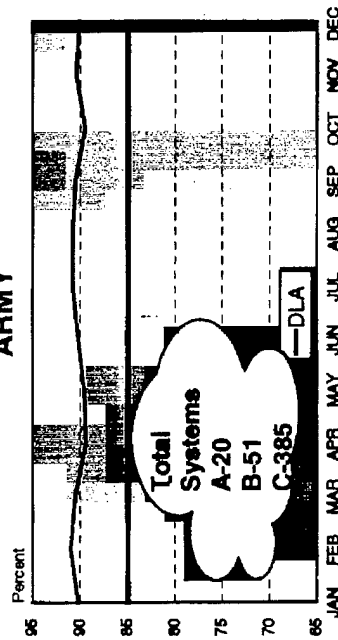




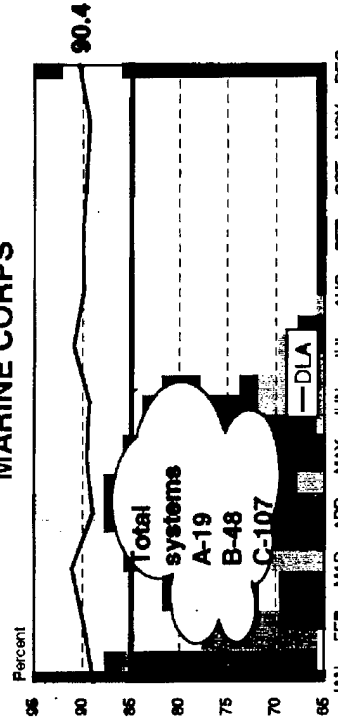
# SUPPLY AVAILABILITY BY SERVICE

DLA GOAL 85%

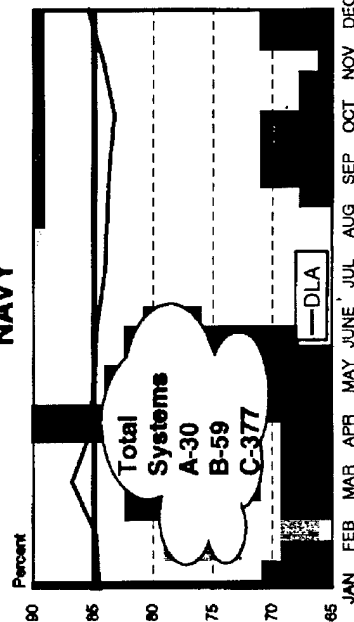
## ARMY



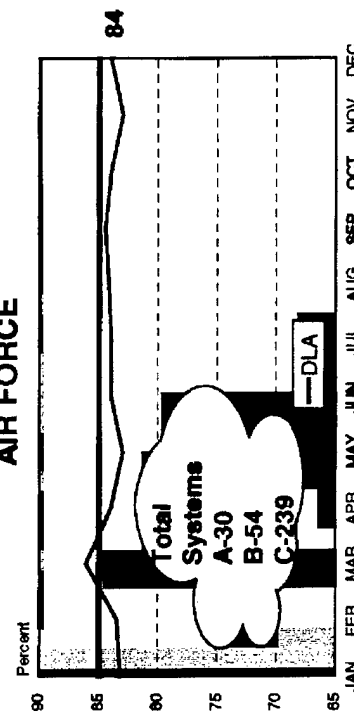
## MARINE CORPS



## NAVY



## AIR FORCE



Overall Weapon System  
Supply Availability - 87.5%



# Weapons Systems Performance Measures

Weapons Systems Categorized by Criticality  
in Support of National Military Strategy

Services			
	<u>Total</u>	<u>ARMY</u>	<u>USMC</u>
Level A: Most Critical	98	20	19
Level B: Critical	202	51	48
Level C: Less Critical	<u>1094</u>	<u>385</u>	<u>107</u>
All Levels	1394	456	174

With emphasis on  
readiness drivers for any  
key Weapon System

Below Goal Dec 98

	<u>Army</u>	<u>USMC</u>
Level A:	0	1
Level B:	0	2
Level C:	15	5





# Focusing on Weapon System Support

## Tiered Inventory Investment

TIER 1 MOST ESSENTIAL 87%

TIER 2 ESSENTIAL 85%

TIER 3 LESS ESSENTIAL 83%

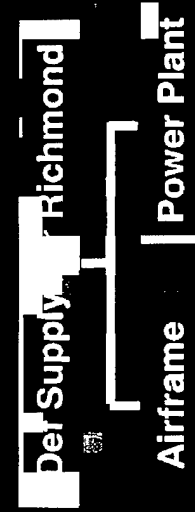
- Business vs Readiness Trade - off
  - Business: Fast - moving, low - cost, low risk items
  - Readiness: Items critical to weapon systems and military operations
- Optimize support within resource constraints
- Weapon system coding essential



# Focusing on Weapons System Support

## Lead Center Concept...

- Establishes Centers of Excellence  
*DSCC - Land and Sea*  
*DSCR - Aviation*  
DISC / DSCP - Troop Support & General Supply
- Provides Single Wpns System Point of Contact at the Program Level (Weapon System Support Manager)
- Works with Service Pgm Mgrs to Resolve Fleet Wide Readiness / Supply Support Issues for DLA Supported Weapon Systems
- Acts as the Primary Catalyst for Inter - Agency Support



Def Supply Ctr Phila

Airframe | Power Plant

Sea and

Troop Spt

General Supply

Sub surface



# TACTICAL WHEELED VEHICLES HEALTH

LEVEL	S	M	C	NSNS	DEC	DEC
				MGD BY DLA	FMO	S/A
A	HEMTT		ARMY	9,347	89	90
A	MMW		ARMY	7,035	93	88
A	HMMW		USMC	5,451	89	91
A	LVS		USMC	7,391	89	92
A	TRACTOR RT		USMC	1,718	91	94
B	Firetruck P19/20/23		AF	1,777	92	94
B	PLS		ARMY	5,805	93	91
C	HET		ARMY	5,626	95	85
C	FMTV		ARMY	7,187	98	86
C	TRUCK	Series	ARMY	651	93	87



# READINESS AND SUPPLY AVAILABILITY

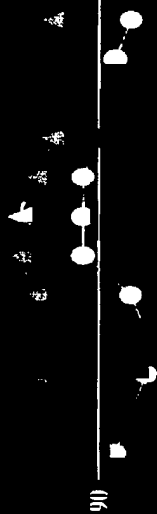
HMMWV

HEMTT

100

90

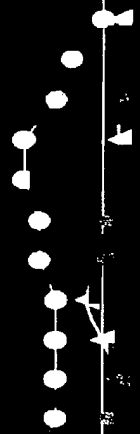
80



READINESS %

S/A

80



READINESS %

S/A

70

70

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

HMMWV	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
READINESS	94	94	94	94	94	94	95	94	93	94	94	93
S/A	89	88	87	87	88	91	91	91	90	89	89	88

HEMTT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
READINESS	91	90	89	90	91	90	90	88	89	89	89	89
S/A	94	93	93	93	93	94	94	95	95	93	92	90

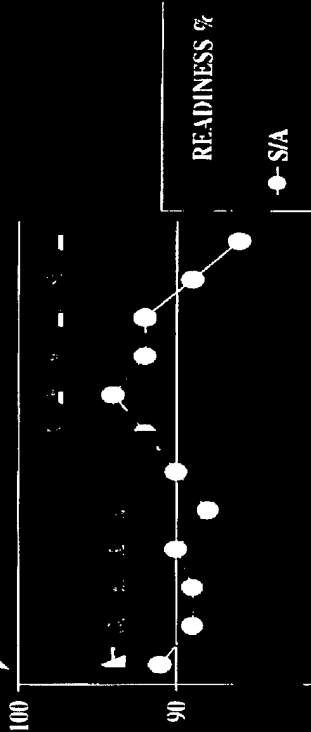
TOTAL NSNS	7,035
EC1 NSN	1,802
AVG MO DMDS	82, 992

TOTAL NSNS	9,347
EC1 NSNS	2,021
AVG MO DMDS	37,003

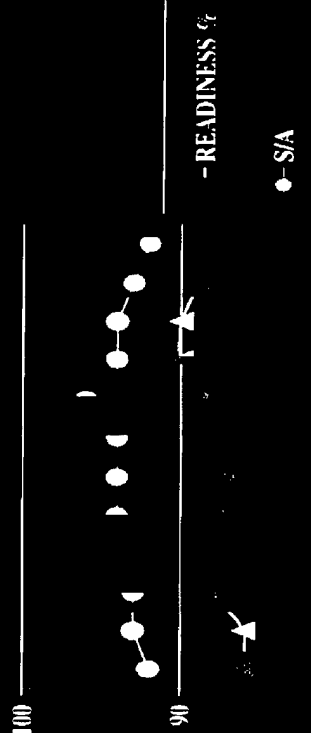


# READINESS AND SUPPLY AVAILABILITY

FMTV



LVS



JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

FMTV	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
READINESS %	95	97	96	93	91	91	95	97	97	97	97	97
S/A	91	89	89	90	88	90	92	94	92	92	89	86
LVS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
READINESS %	86	86	88	88	88	87	89	89	90	90	89	89
S/A	92	93	93	93	93	94	94	94	96	94	94	93

TOTAL NSN 7,187  
ECI NSN 1,640  
AVG MO DMDS 16,067

TOTAL NSNS 7,391  
ECI NSN 1,515  
AVG MO DMDS 3,280



# Contractor Logistic Support DLA Corporate Strategy

- **PARTNER with Service Project and Program Managers**
- **Obtain best value from existing DoD Inventories**
- **Leverage Wholesale Contracting Resources**
- **Tailor CLS to customer, system, commodity, region**



# CONTRACTOR LOGISTICS SUPPORT

## POSSIBLE PROs:

- Modernization Through Spares
- Reduced Cycle Times
- Reliability Based Logistics & Trigger Based Item Management
- Single Logistics Face to the Warfighter for the System
- Reduced Government Logistics Footprint
- Cost Savings for the Specific Weapon System's Support

## POSSIBLE CONs:

- May not effectively use existing Service / DLSC investment in inventory / pipeline
- Degrades nationally leveraged buying power for consumables (as well as common reparables) across systems
- May drive up the total cost of logistics support across DoD
  - Unless infrastructure / investment intelligently used
- Multiple Contractors on the Battlefield
- Poor integration in requesting and receiving support



# WHAT DLA OFFERS

- Over 35 Years Experience in Supply Chain Management for Consumable Materiel Support to the Warfighter
- Nationally Leveraged Buying Power Across Weapons Systems / Military Services
- Inventory of Critical Consumable Parts for Weapon Systems
  - Surge and Sustainment
- Recognized Government Leader in EC / EDI
- Extensive Warehouse / Distribution Network
  - New: Dedicated Truck Service for Time Definite Delivery and Tailored Logistics Support
- Innovative Methods of Support Using Best Commercial Practices



DEFENSE LOGISTICS AGENCY



# DLA ELECTRONIC COMMERCE

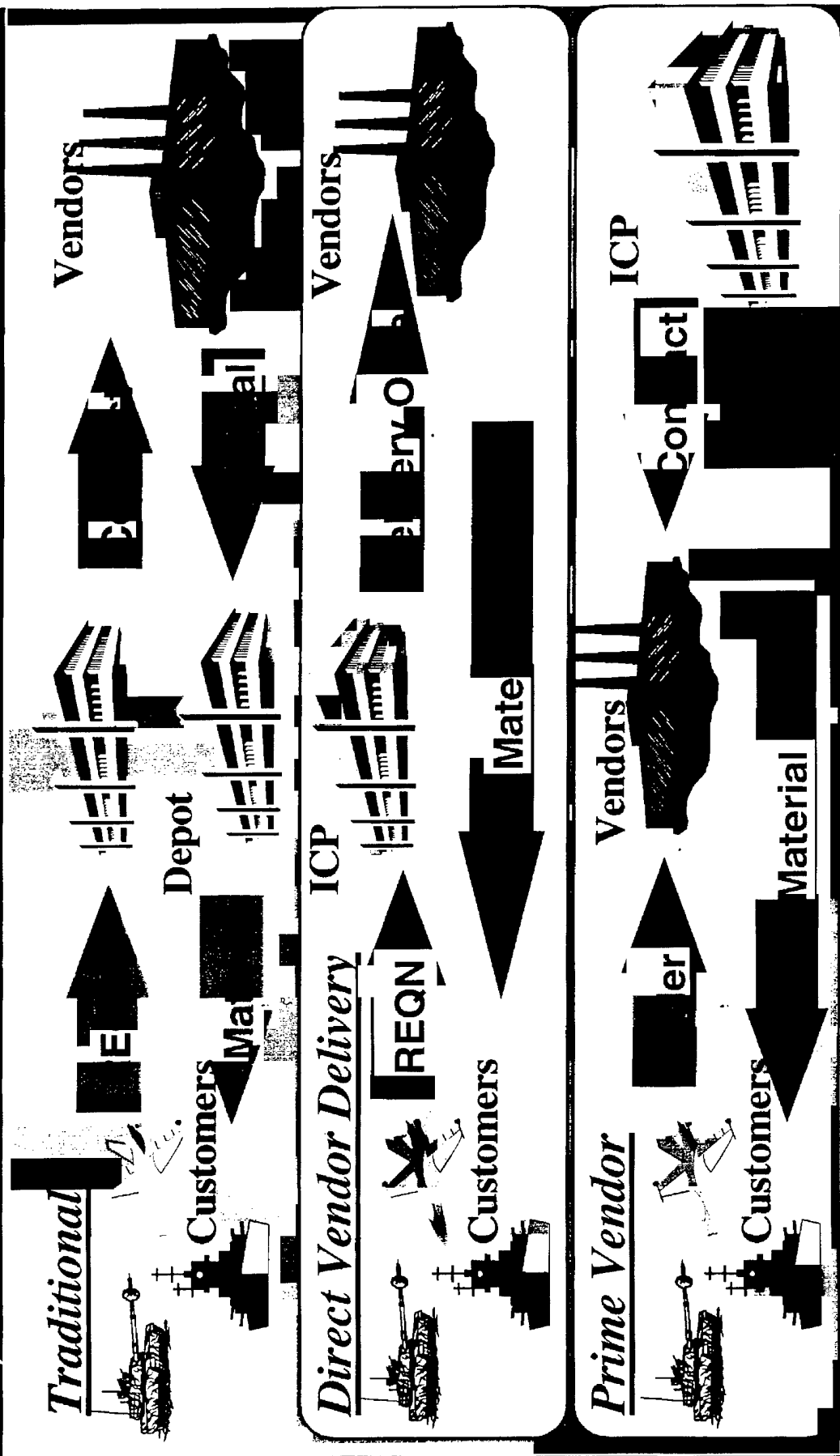
## INITIATIVES

E Check  
E Commerce  
E Data Interchange  
E Document Access  
E Document Mgmt





# Direct Vendor Delivery/ Prime Vendor Arrangements





# Shift to Commercial Practices ...Prime Vendor/ Virtual Prime Vendor

**FY 94** **FY 95** **FY 96** **FY 97** **FY 98** **FY 99**

## PRIME VENDOR

Pharmaceutical  
Medical/Surgical

Mail Order Pharmacy

Subsistence

Clothing & Textile

Wood Products

Marine - Life Saving and Diving

Material Handling

Metals

HAZMAT Systems

Fleet Automotive

## VIRTUAL PRIME VENDOR

C-130

Maintenance, Repair & Operations

Industrial Prime Vendor (Benchmark)

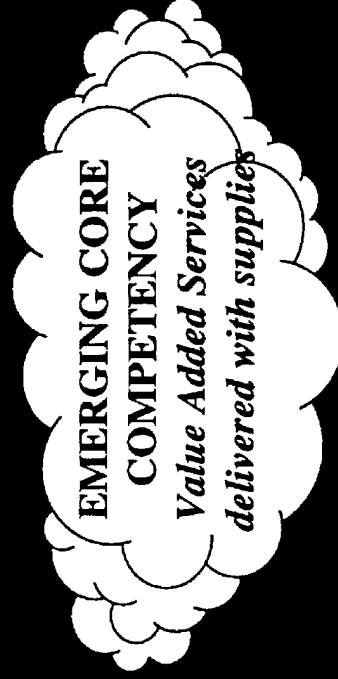
C-5

VPV Uniforms

*Manager of Suppliers - NOT Supplies*

▲ = Initial Award

▲ = Future Award





# ICP WORKLOAD

## Contract Actions

	FY95	FY96	FY97	FY98
Prime Vendor	\$551.8M	\$827.8M	\$1.06B	\$1.3B
Virtual Prime Vendor	0	0	\$7.8M	\$14.4M
Corporate Contracts	\$3.5M	\$28.9M	\$89.3M	\$86.2M
Long Term Contracts	\$2.6B	\$2.1B	\$2.3B	\$3.6B
Total Obligated	\$3.1B	\$3.0B	\$3.3B	\$6.4B

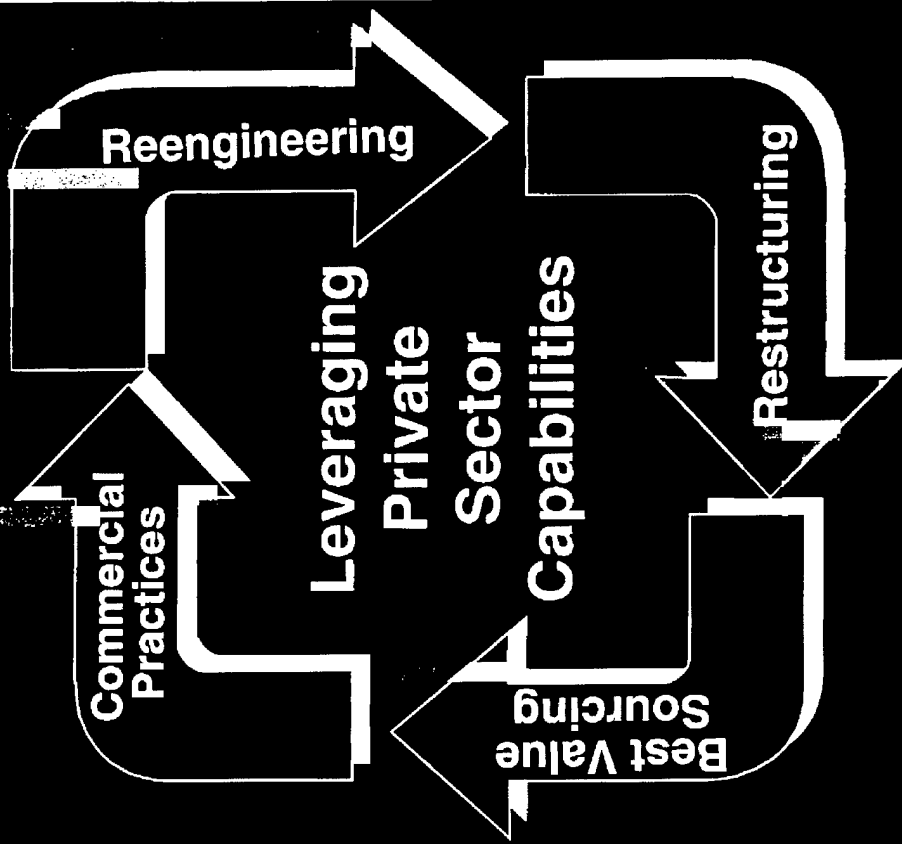
DEFENSE LOGISTICS AGENCY



# DLA CLS INITIATIVES

- Prime Vendor
- Virtual Prime Vendor
- Prime Vendor Overseas
- Industrial Prime Vendor
- EMALL
- Re-Refined Oil
- MTVR
- Corporate Contracts

**FLEXIBLE  
TAILORED**



DEFENSE LOGISTICS AGENCY

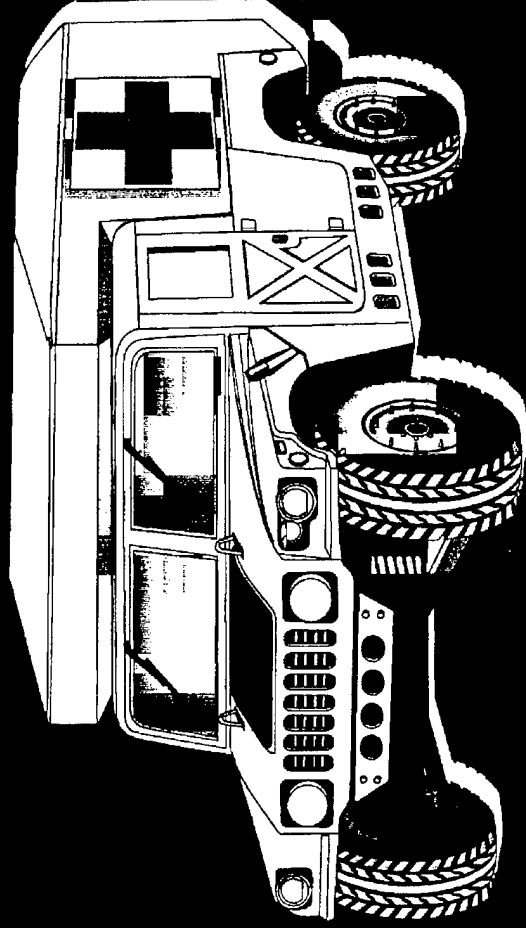


# PRIME VENDOR

**What it is:** One Vendor under long term contract. Provides all materiel in a Product Line or Commodity to a Major Customer. Commercial Materiel using existing distribution systems.

**Examples:** Subsistence and Medical

**Volume:** \$ 1.3 Billion FY98





# VIRTUAL PRIME VENDOR

**What it is:** Regional Focus to provide parts and tech support, inventory mgmt, requisitioning and forecasting for specific weapon system support

**Examples:** Fleet Automotive Support Initiatives (FASI)  
Covering AMG (5Tons, HMMWVs)  
Oshkosh (LVS, P19 Firetruck)  
Caterpillar (D7 Dozer, 621B Scraper)  
Award Projected 2Q99 (Camp Pendleton)  
(Camp Lejeune)

**Volume:** 2,180 NSNs Annual Dollar \$14.9M

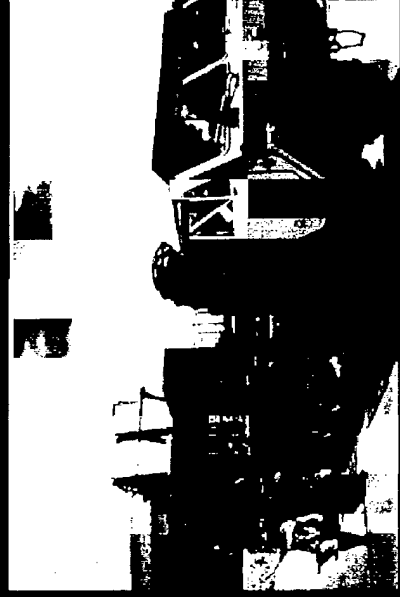


# PRIME VENDOR OVERSEAS

**What it is:** One Vendor provides centralized support coverage for commercially available parts to support Overseas customers

**Examples:** Prime Vendor Overseas supports 800 Contractors Cage Codes for part number and overseas requests submitted via MILSTRIP using Project Code JZC

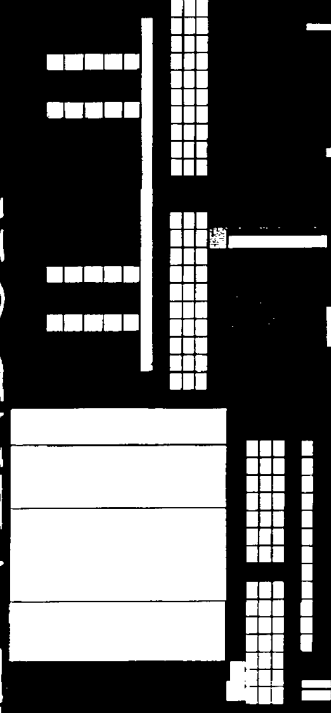
**Volume:** 1252 NSNs, Price Listing, Estimated Annual Dollar \$5M







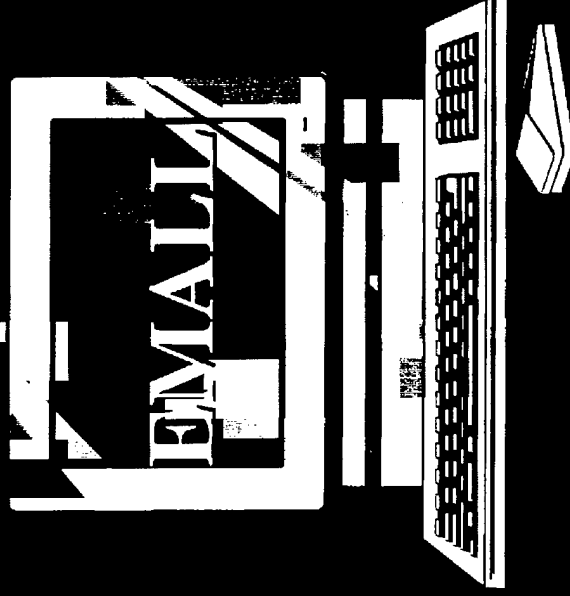
# INDUSTRIAL PRIME VENDOR



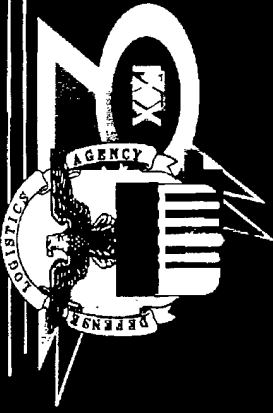
**What it is:** Aligns Prime Vendor Relationship to Industrial Posture.  
Promotes horizontal integration across Weapon Systems.  
Exploits emerging technology across Industry.

**Examples:** Types of Items targeted: O'Rings, Bolts, Screws, Nuts, Fasteners, Seals, Couplings, Rivets. Targeted customers include large maintenance operations.

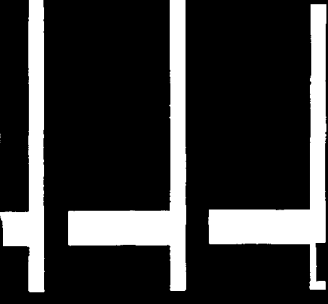
**Volume:** Currently 43,000 NSNs Annual Demand Value \$22 M



- What it is:** Customer Shopping via Internet to Access Both DoD and Vendor Inventory. Includes robust search engine via Part#, NSN, Manufacturer, Vendor Catalog
- Examples:** Allows customer shopping and decision point purchasing via DoD Standard Requisitioning or IMPAC Credit Card
- Volume:** Currently 2 million items, 9 Vendors



# RE - REFINED OIL



What it is: Closed Loop Delivery of new and pick up of old  
10W30/15W40 Oil

Example 7 Day Delivery of bulk and packaged products via  
Direct Vendor Delivery. Current Customers Ft. Carson  
Ft. Riley, Ft. Hood.

Volume 12 NSNs, 13 Military Bases, 5 Federal Agencies



# Medium Tactical Vehicle Replacement



**What it is:** Tailored CLS to support USMC Medium Tactical Vehicle Fleet. Intent to replace with more robust vehicles and lifecycle logistics support.

**Examples:** MTVR is a 5 year logistics support contract designed to decrease order ship time, reduce retail stockage and costs.

**Volume:** Current Coverage for 5,666 vehicles with increase options



# DLA Corporate Contracts Highlighting Tactical Wheeled Vehicles

COMPANY	TOTAL COVERAGE	UNIT \$	DELIVERY	TER
	#NSNs/PART#s			
AMGEN	560/N/A	3.3M	DVD 21 DAYS	95 5 Year
CUMMINS	529/Price List	5.5M	DVD 7 DAYS	94/2 Year
Stewart & Stevenson	256/N/A	1.2M	DVD 10/30 DAYS	98/5 Year
BTMC	167/Price List	1M	DVD 30 DAYS	98/5 Year
KOMATSU	418/Price List	2.6M	DVD 5 DAYS	97/5 Year
NAPA	0/200K	1.5M	DVD 5 DAYS	96/Impac Card
OSHKOSH	1717/N/A	7.4M	DVD 10 DAYS	95/5 Year
GROVEN. AMERICA	1443/Price List	1M	DVD 10 DAYS	98/5 Year

DEFENSE LOGISTICS AGENCY



# SUMMARY

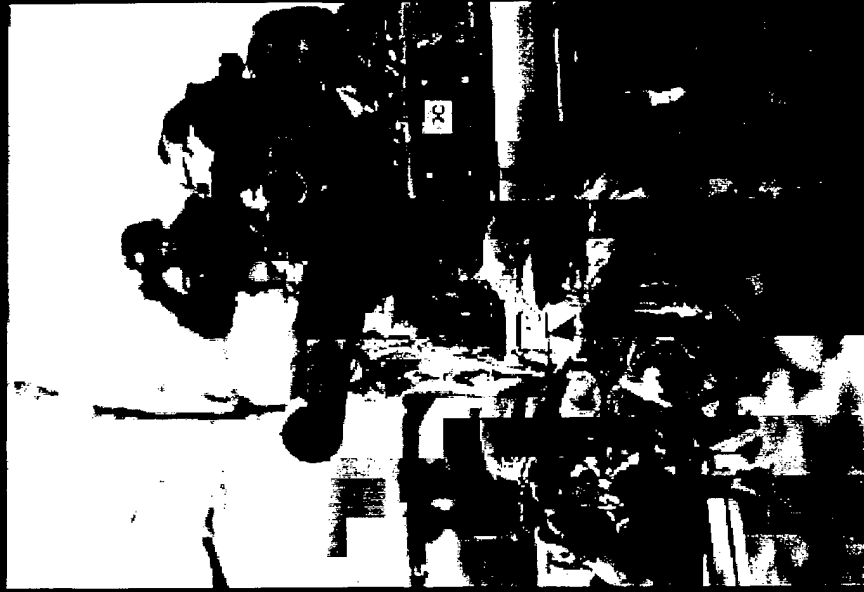
## One Team - One Focus

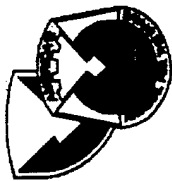
Weapon System Focus

Readiness Driver for DoD

Expectations ↑ Resources ↓

CLS Leader and Partner





# ZACOM

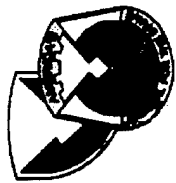
*Mobility and Firepower  
for America's Army*



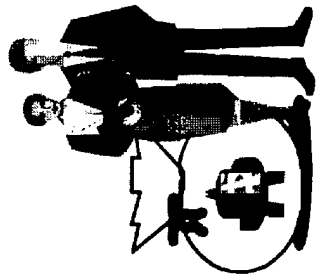
Tank-automotive & Armaments COMMAND

DA 238

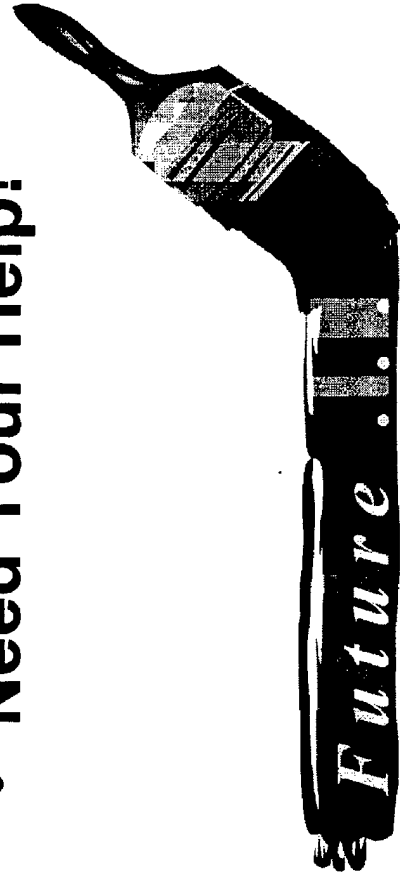
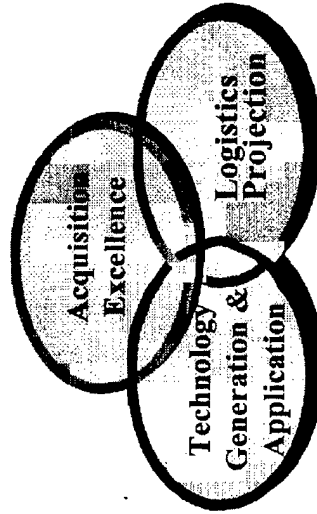
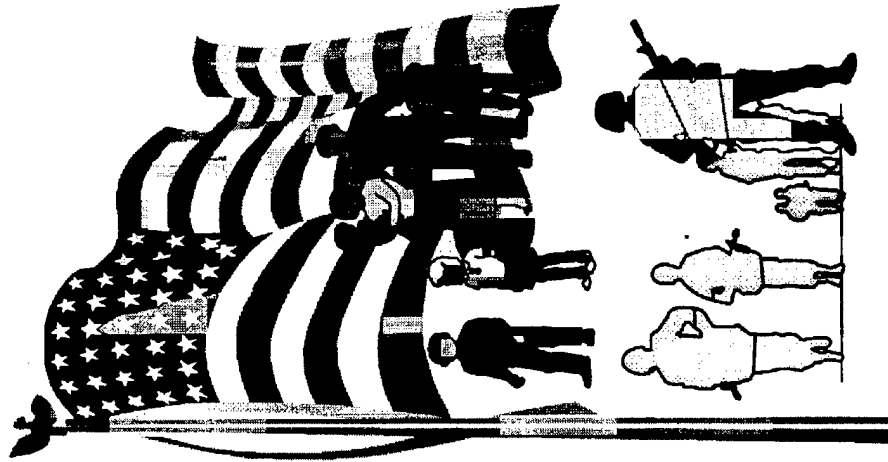
Distribution Statement A - Approved for  
Public Release; Distribution Unlimited



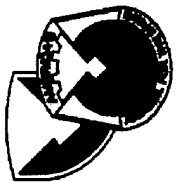
# Briefing Outline



- TACOM
- TACOM and Trucks
- Army Fleet/Distribution
- Procurement
- Research and Development
- Sustainment
- Need Your Help!







# Our Higher Headquarters

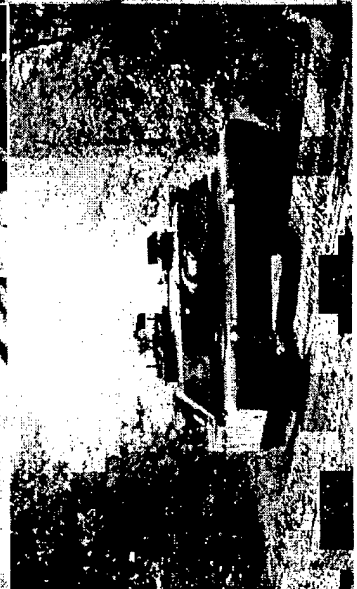


*Department of Defense*

*Department of the Army*

*Army Materiel Command*

**Tank-automotive &  
Armaments COMmand**

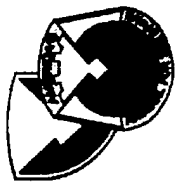


2/2/99

3/55

*Committed to Excellence*

0. 246



# A Common Vision



## *Taking America's Army into the 21st Century*

### Army Vision

The World's Best Army, a full spectrum force- trained and ready for victory. A Total Force of quality soldiers and civilians:

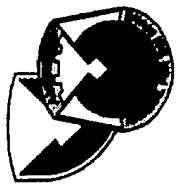
- A values-based organization
- An integral part of the Joint Team
- Equipped with the most modern weapons and equipment the Country can provide
- Able to respond to our Nation's needs
- Changing to meet challenges of today . . . tomorrow . . . and the 21st Century.

### Armament & Armaments

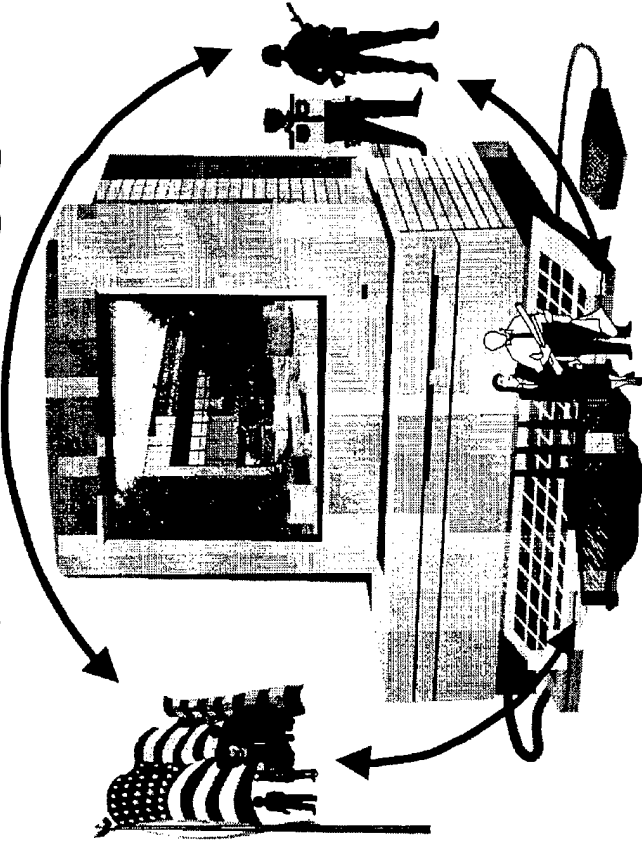
- To make the technology and sustainment systems work for soldiers through the seamless integration of S&T, R&D, Acquisition, Log Sustainment and Soldier Readiness.
- To create a business environment at TACOM where every associate understands the requirement to control costs and manage from the customer perspective and understands their inherent responsibility to do so.

### Army Materiel Command Strategic Vision

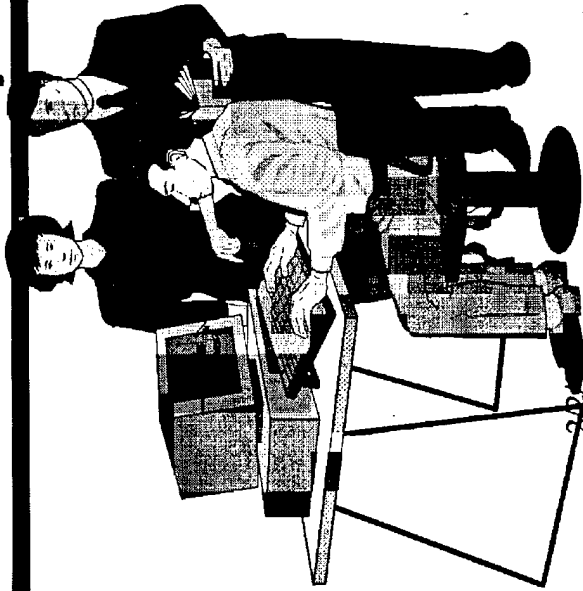
The leader in equipping and sustaining America's Army through superior technology and responsive support assuring worldwide power projection and decisive victory.  
2/2/99 4/55



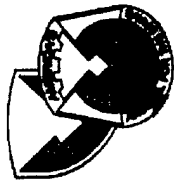
# Vision For The Future Business Environment In TACOM



A fully integrated business environment connected by a fully integrated data environment using commercial business processes to integrate business operations within each organization, across major Commands, across Services, across DoD and across Industry.



A corporate management structure for which the organizing principle is multi-functional work teams to institutionalize the concept of integrated process teams; a highly decentralized structure which uses the integrated data environment to link desk top "servers" to facilitate the transformation of data into actionable information to enable more efficient, fully integrated business operations at reduced cost.



# COMMON GOALS

- Manage From the Customer Perspective...
- Increase Customer Satisfaction
- Reduce the Cost of Doing Business
- Work the Partnerships

## COMMITMENT TO OUR

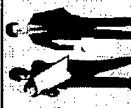
### •Customers ...

We Are Your Partners In Readiness



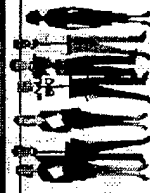
### •Suppliers .Professional Business

Relationships-- Mutually Beneficial



### •Associates ...

Challenging, Satisfying  
Work--A Stake In The Corporation



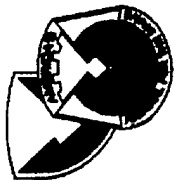
### •Stockholders ...

Good Stewardship



2/2/99

*Committed to Excellence*



# TACOM MISSION

-To Generate Warfighting Capability for the Army

-To Sustain the Warfighting Readiness of the Army

-To manage the Army's Investment in S&T, R&D and Sustainment for the Army

3,269 Weapon Systems  
32,048 NSNs  
300 Systems in Acq Pipeline

-Serve as the Life Cycle Manager and Integrator for Ground Combat and Support Equipment



## Tank-automotive & Armaments COMMAND

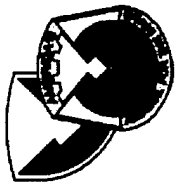
Research, Develop, Field and Support

Mobility and Armament Systems Total Life Cycle

*To Support Army Readiness*

Combat Vehicles	Fuel & Water Distribution Eqpt	Mortars	Rail
Tactical Vehicles	Sets, Kits & Outfits	Rifles	Watercraft
Trailers	Shop Equipment	Machine Guns	Petro & Lub Eqpt
Construction Equipment	Chemical Defense Equipment	Ammo	
Material Handling Equipment	Howitzers	Aircraft Armaments	
Tactical Bridges	Large Caliber Guns	Demolitions & Explosives <sub>7/55</sub>	

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# Tank-automotive & Armaments COMmand



*We Are Your Partners In Readiness*

**Mobility**

**Firepower**

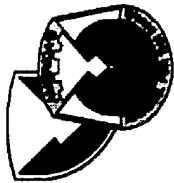
**Systems Integration**

**Survivability**

**Lethality**

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245



# Current and Future Trends in Tank-Automotive and Armaments

INSPECTOR GENERAL

TACOM

COMMANDING GENERAL  
DEP TO THE COMMANDER  
CHIEF OF STAFF

PERSONAL AND  
SPECIAL STAFF  
BUSINESS CENTER

LEGAL OFFICE

U.S. ARMY  
GARRISON-  
SELFRIDGE  
BUSINESS CENTER

7,900 Associates  
(11,711 w/Depots)

RESOURCE  
MANAGEMENT  
CENTER

RESOURCE BUSINESS  
MANAGEMENT OFFICE

COMPTROLLER

DIRECTORATE FOR  
COST AND SYSTEMS  
ANALYSIS

DIRECTORATE FOR  
INFORMATION  
MANAGEMENT

CIVILIAN PERSONNEL  
ADVISORY CENTER

DIRECTORATE FOR  
INSTALLATIONS AND  
SERVICE

TACOM BASE  
REALIGNMENT AND  
CLOSURE OFFICE

ACQUISITION  
CENTER

ARMAMENT  
RESEARCH,  
DEVELOPMENT &  
ENGINEERING  
CENTER

STAFF ELEMENTS

ASSOC TECHNICAL  
DIRECTORS

ARMY TUEZ  
MANAGEMENT OFFICE

LEGAL OFFICE

FIRE SUPPORT  
ARMAMENTS CENTER

CLOSE COMBAT  
ARMAMENTS CENTER

WARHEADS,  
ENERGETICS & CBET  
SPT ARMAMENT CTR

QUALITY  
ENGINEERING DIR

ENGINEERING DATA  
MANAGEMENT DIR

ACQUISITION CTR

DIR FOR BUSINESS  
OPERATIONS

DEFENSE  
AMMUNITION  
LOGISTICS ACT

GARRISON CDR

PUBLIC SAFETY &  
ENVIRONMENTAL  
AFFAIRS DIR

TANK-AUTOMOTIVE  
RESEARCH,  
DEVELOPMENT, AND  
ENGINEERING  
CENTER

OPERATIONS  
BUSINESS GROUP

VIRTUAL  
PROTOTYPING  
BUSINESS GROUP

SYSTEMS &  
TECHNOLOGY  
INTEGRATION  
BUSINESS GROUP

RESEARCH  
BUSINESS GROUP

DEVELOPMENT  
BUSINESS GROUP

ENGINEERING  
BUSINESS GROUP

NATIONAL  
AUTOMOTIVE CENTER

INTEGRATED  
SYSTEMS  
MANAGEMENT  
CENTER

EXECUTIVE FOR  
SYSTEMS  
MANAGEMENT

ARMY TUEZ  
VEHICLES

EXECUTIVE FOR  
SECURITY  
ASSISTANCE CTR

ARMY TUEZ  
VEHICLES

EXECUTIVE FOR  
OPERATIONS

EXECUTIVE FOR  
OPERATIONS

ARMAMENT AND  
CHEMICAL  
ACQUISITION AND  
LOGISTICS  
ACTIVITY

PLANNING  
DEVELOPMENT &  
PROGRAM OFFICE

ARMAMENT AND  
CHEMICAL  
ACQUISITION AND  
LOGISTICS  
ACTIVITY

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CHEMICAL  
ACQUISITION AND  
LOGISTICS  
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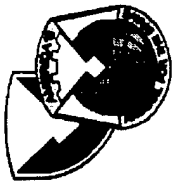
ARMAMENT AND  
CHEMICAL  
ACQUISITION AND  
LOGISTICS  
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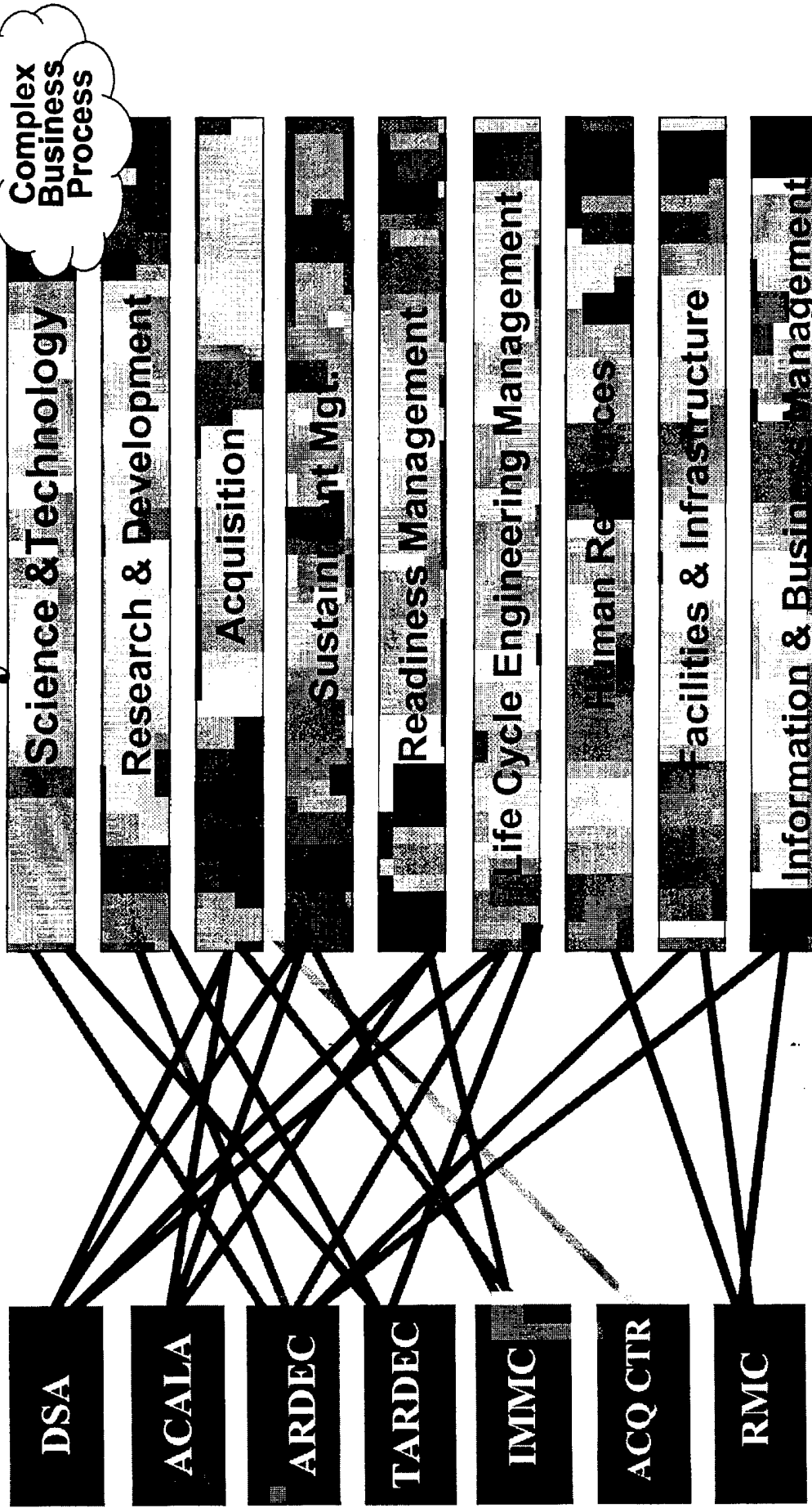
2/2/99

9/5



# Current Corporate Process

Today

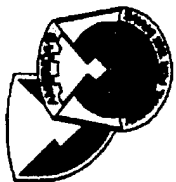


2/2/99

10/55

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# How we will do it - Structure TACOM of the Future (Concept)

**FY 04**  
5,994 Associates  
(9,490 w/ Depots)

**STAFF**

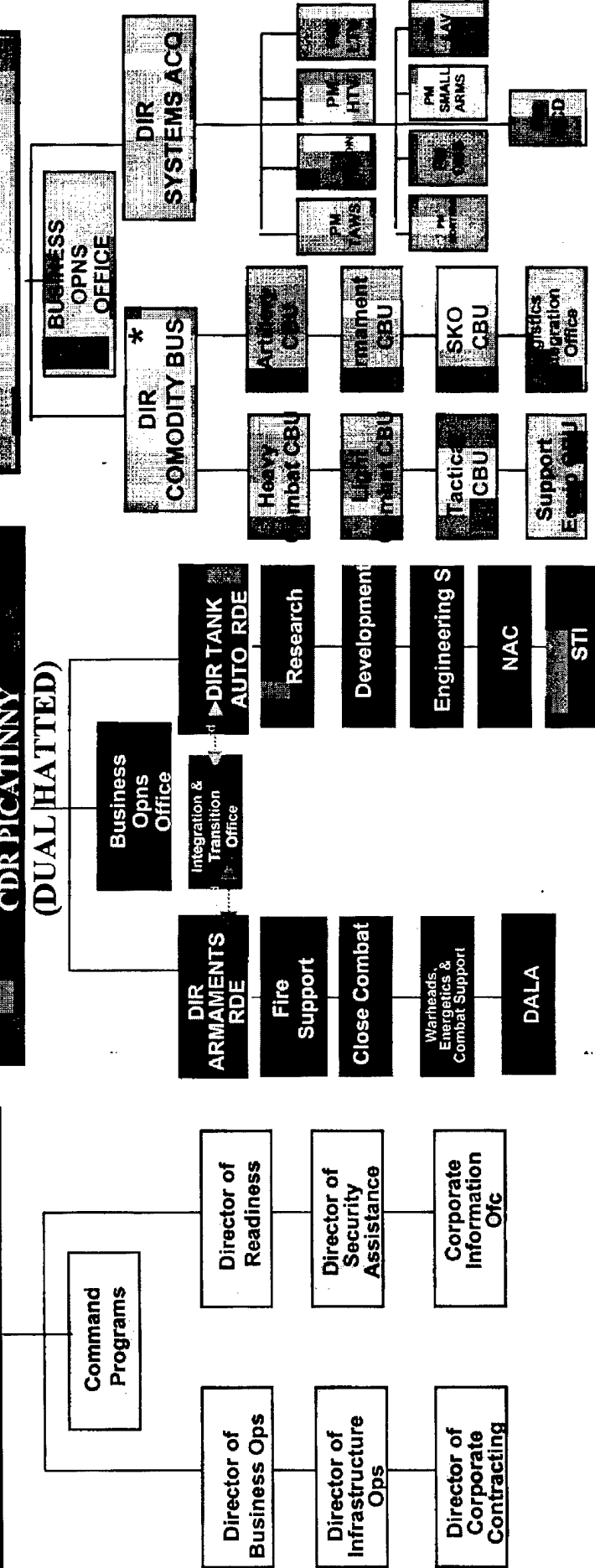
**CG**  
Dep to the Cdr  
CofS

**ANAD**  
**RRAD**

**DEPUTY FOR CORPORATE  
MANAGEMENT**

**DEPUTY FOR  
RESEARCH DEVELOPMENT &  
ENGINEERING**  
CDR PICATINNY

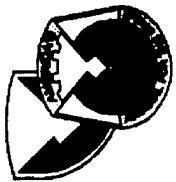
**DEPUTY FOR LIFE  
CYCLE MGT**



\*ACALA Site Mgr.  
11/55

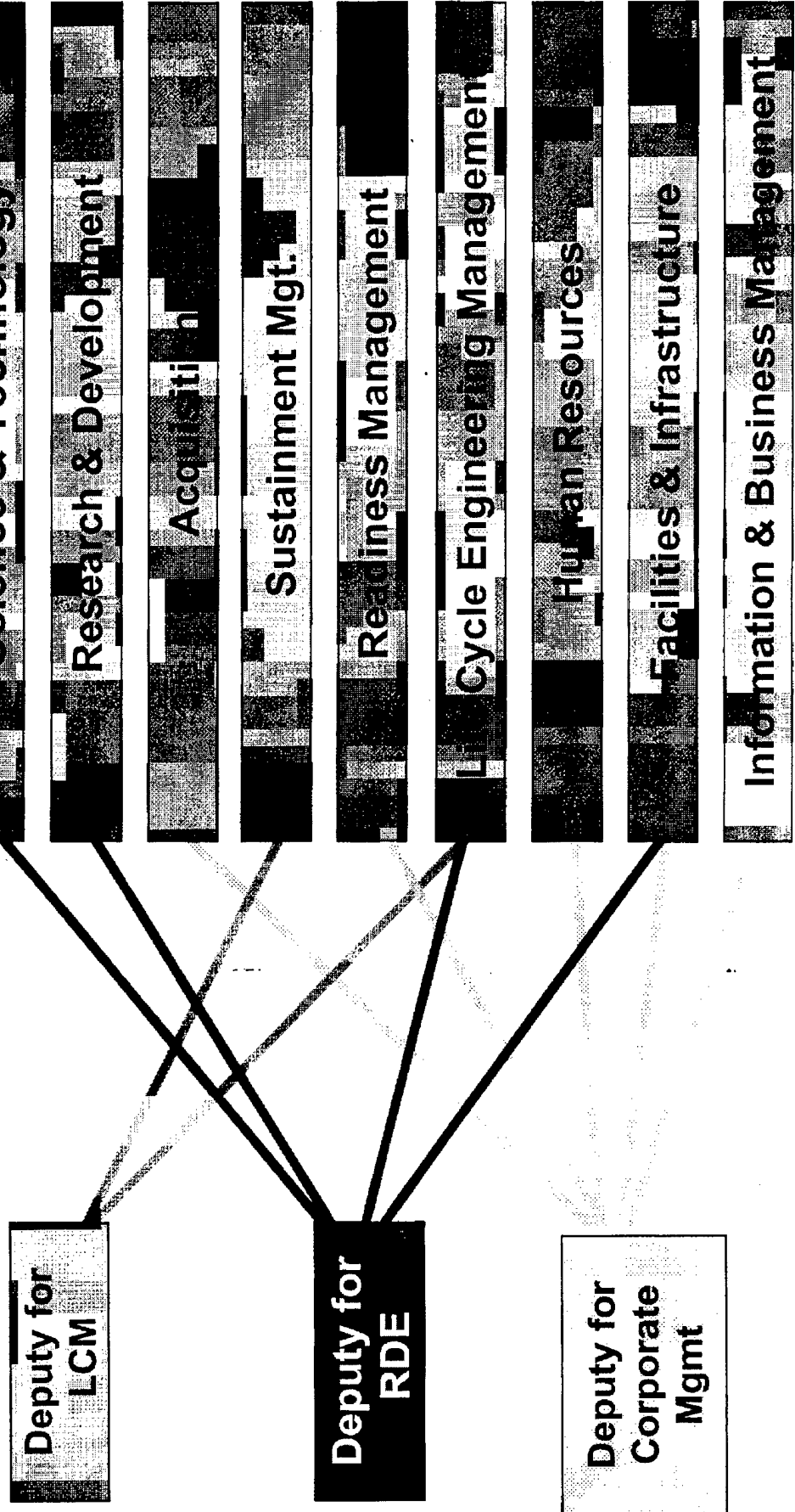
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# Integrated Corporate Process

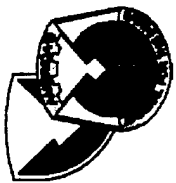
## Tomorrow



2/2/99

12/55

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# Projected FY99 Resources



Credits & Expenses-  
Other Agencies:

Contracting:

Operating  
Costs:

Depots:

Total \$\$ Executed:

\$4.60B

\$6.3B

\$40B

\$6.20B

\$53B



# What TACOM Buys

ARDEC

WARREN

ACALA

R&D and

Initial Production

R&D, Production

Sustainment

Production

Sustainment

• MUNITIONS

• WEAPONS & ARMAMENT SYS

• FIRE CONTROL SYSTEMS

• FUZES

• WARHEAD MISSILES

• ROCKET MOTORS

• TRAINING ITEMS

• LOG AND GENERAL SUPPORT

• POLLUTION PREVENTION

• COMBAT VEHICLES

• TACTICAL VEHICLES/TRAILERS

• SUPPORT EQUIP

• TACTICAL BRIDGES

• FUEL & WATER DISTRIBUTION

SYSTEMS

• HOWITZERS

• COMBAT VEH

• ARMAMENTS

• TRAINING DEVICES

• CHEM DEFENSE

• RIFLES

• MACHINE GUNS

• HANDGUNS

• AIRCRAFT ARMTS

• MORTARS

• RECOVERY VEH

• FIRE CONTROL SYS

• GUNS (105 - 165MM)

\$860 Million

Est. Oblig.

\$3.1 Billion

Est. Oblig.

\$486 Million

Est. Oblig.

Weapons

Munitions

Combat Vehicles

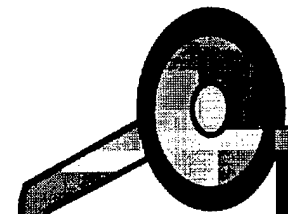
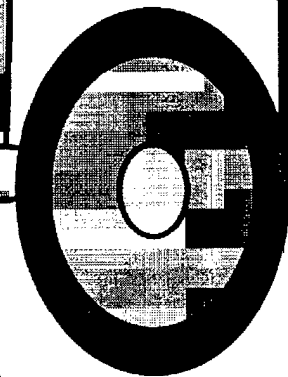
Support Vehicles

Chemical Defense

Machine Guns

Aircraft Armaments

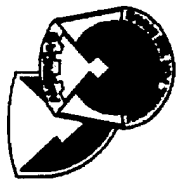
Support Equipment



TACOM R&D & Oblig. \$4.6 Billion

2/2/99

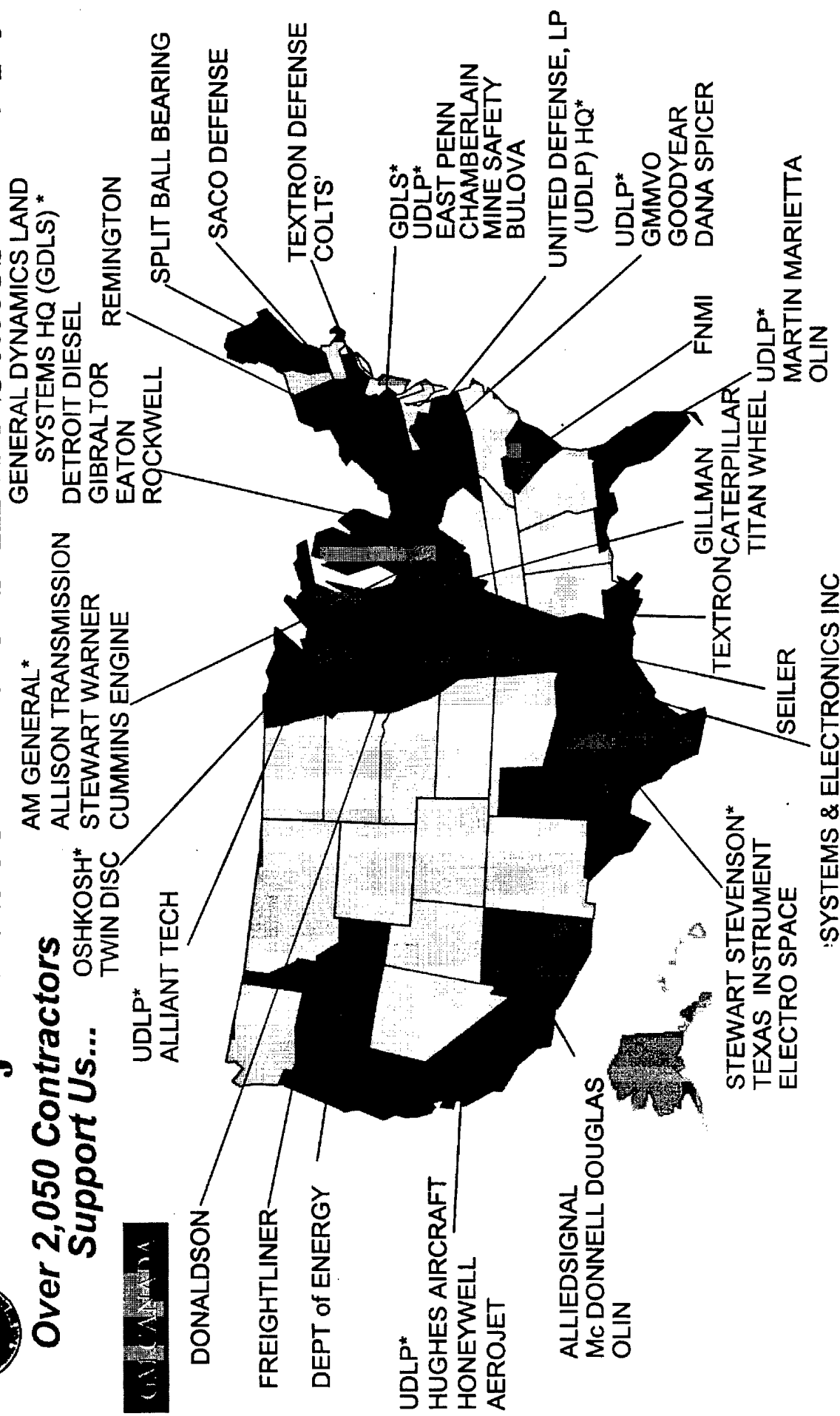
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# Weapon System Prime And Major Subcontractors In 24 States



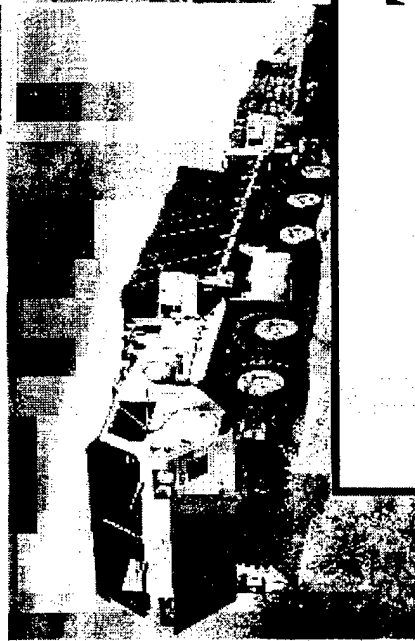
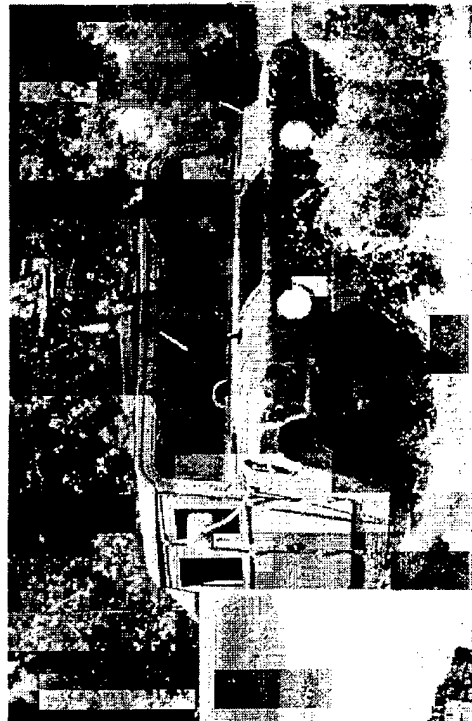
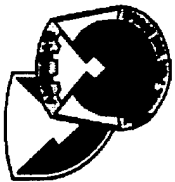
**Over 2,050 Contractors  
Support Us...**



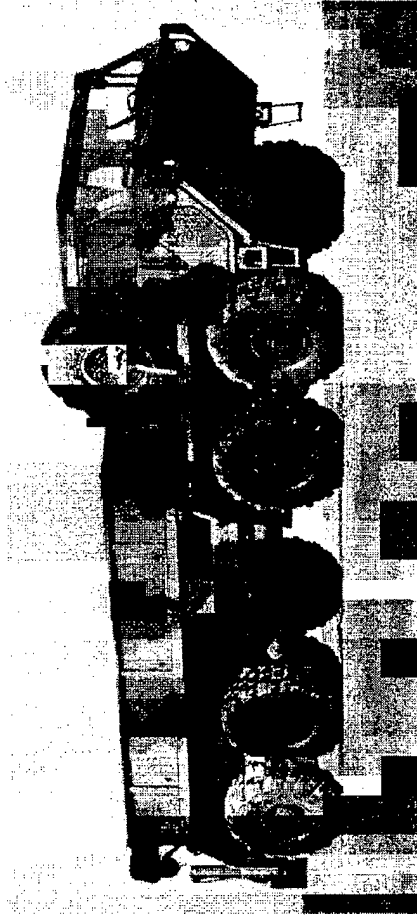
**...located throughout  
the United States!**  
15/55

\* Prime Contractors  
No Contractors located in Alaska and Hawaii  
As of Mar 1998 2/2/99

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# TACOM Tactical Wheeled Vehicles

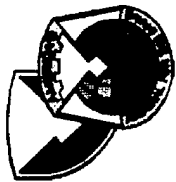


2/2/99

16/55

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253



# Tactical Wheeled Vehicle Fleet

## LIGHT TRUCKS/TRAILERS

DENSITY TRUCKS: 123,996

HISTORICAL OR%: 94%

CURRENT OR%: 92%

AGE RANGE: NEW - 16 YRS

AVG AGE: 9 YRS

DENSITY TRAILERS: 21,035

HISTORICAL OR%: 97%

CURRENT OR%: 99%

AVG AGE: 20.8 YRS

## MED. TRUCKS/TRAILERS

DENSITY TRUCKS: 96,210

HISTORICAL OR%: 91%

CURRENT OR%: 92%

AGE RANGE: NEW - 27 YRS

AVG AGE: 18.7 YRS

DENSITY TRAILERS: 64,113

HISTORICAL OR%: 96%

CURRENT OR%: 94%

AVG AGE: 8 - 31 YRS

ONLY 9500 TRAILERS ARE REPORTABLE.

## HEAVY TRUCKS/TRAILERS

DENSITY TRUCKS: 26,440

HISTORICAL OR%: 92%

CURRENT OR%: 90%

AGE RANGE: NEW - 20 YRS

AVG AGE: 10.8 YRS

DENSITY TRAILERS: 25,281

HISTORICAL OR%: 97%

CURRENT OR%: 97%

AVG AGE: 15.2 YRS

DENSITY FLATRACKS: 10,468  
NOT OR% REPORTABLE.

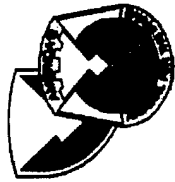
2/2/99

17/55

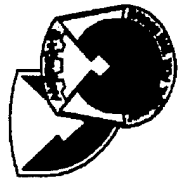
**U.S. ARMY**

*Committed to Excellence*

00 254 /



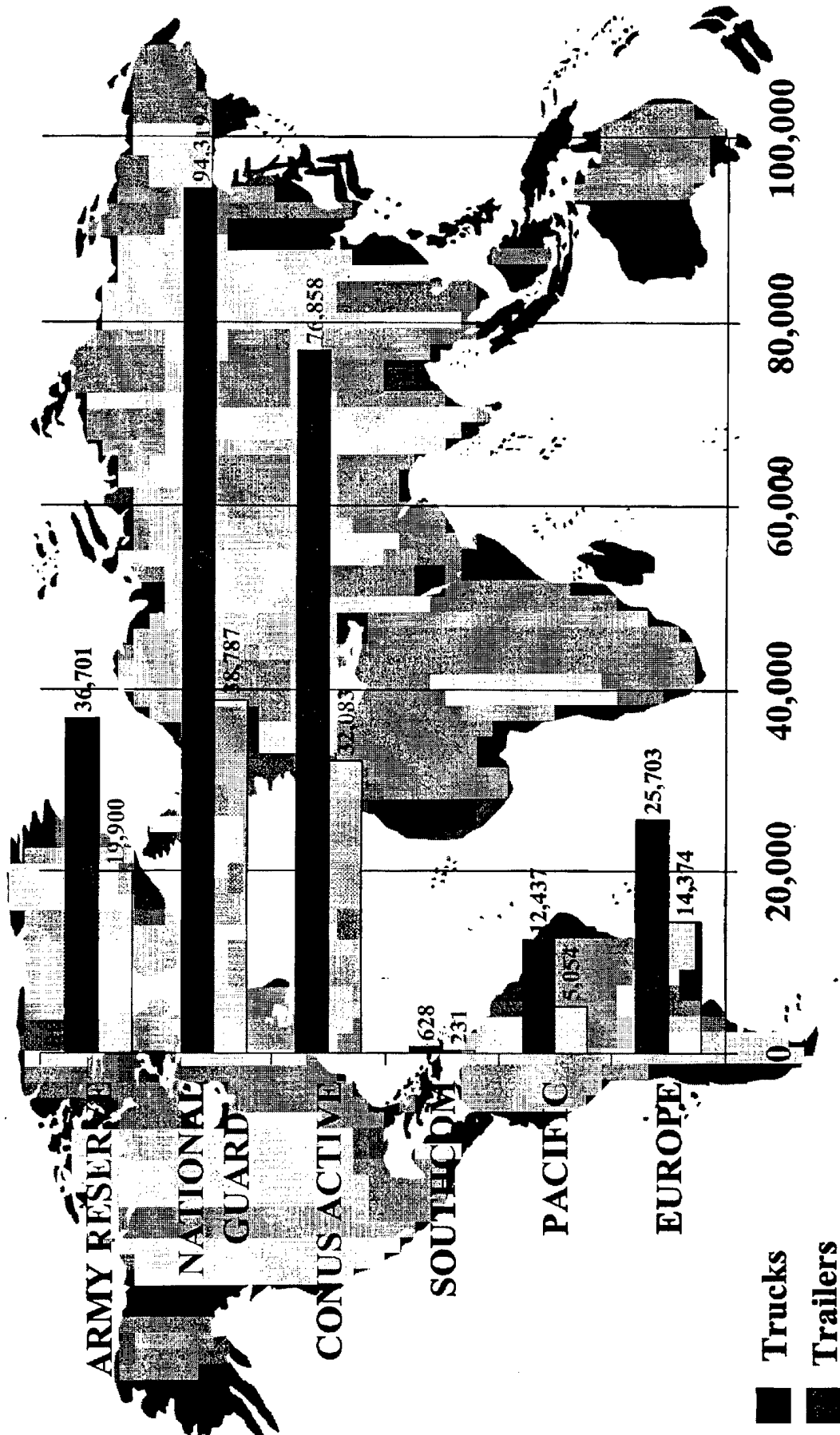




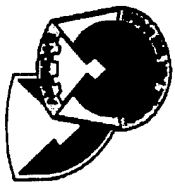
# Tactical Wheeled Vehicle and Trailer Fleet



246,646 Trucks 110,429 Trailers

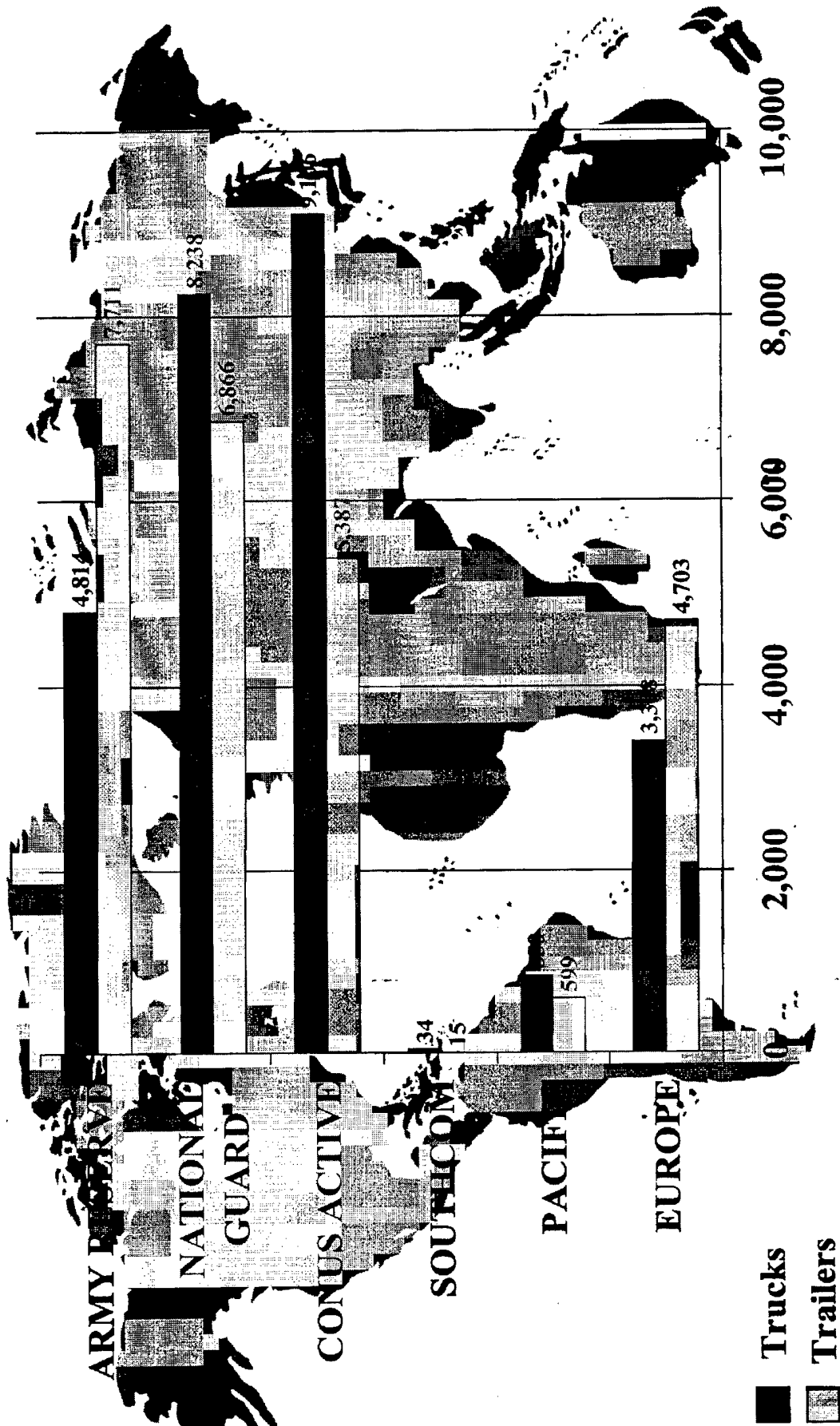


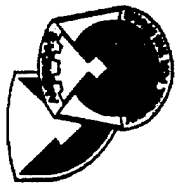
Trucks  
Trailers



# Heavy Tactical Wheeled Vehicle Fleet

26,440 Trucks    25,281 Trailers



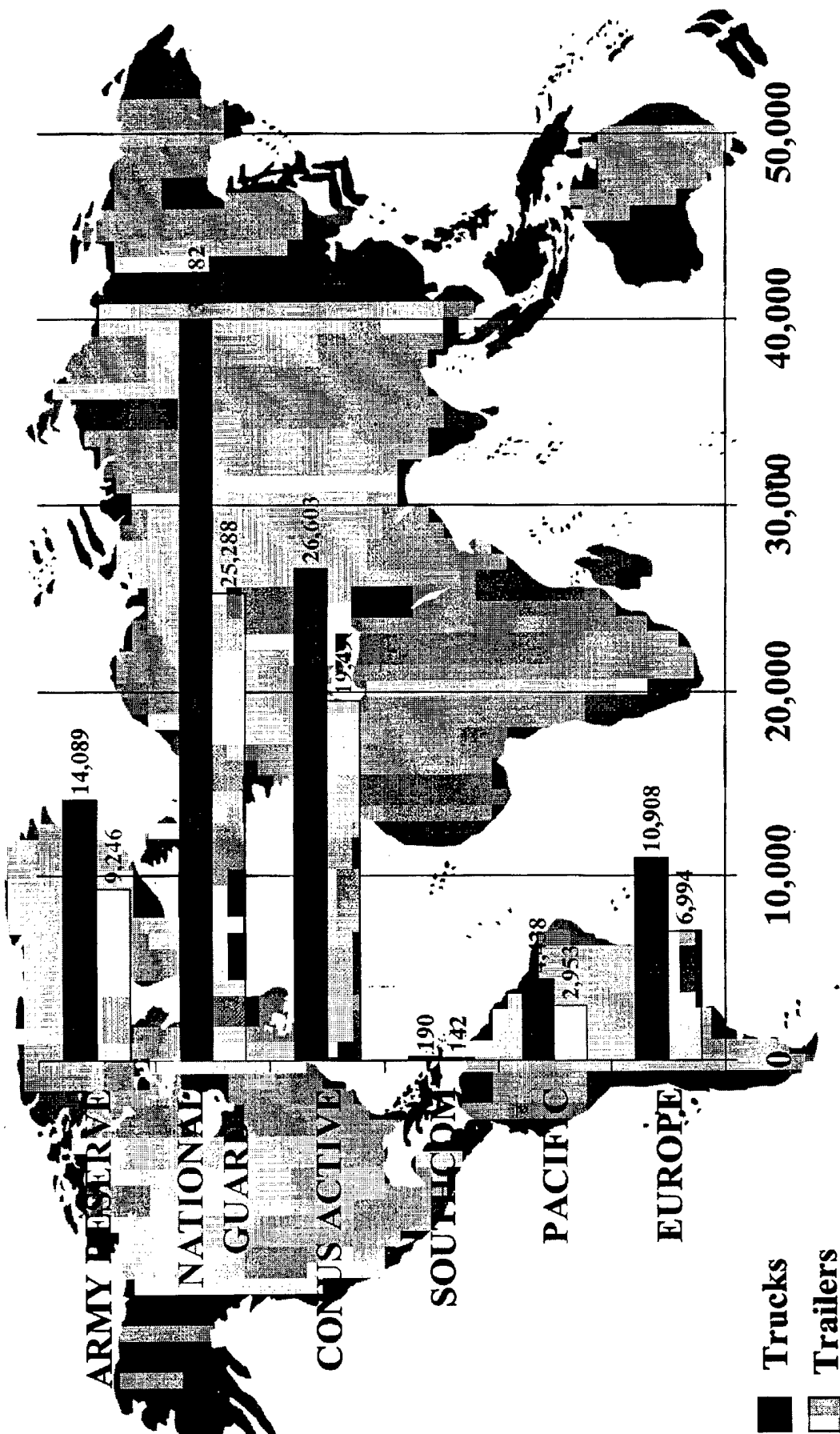


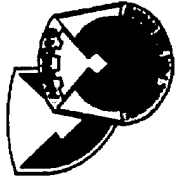
# Medium Tactical Wheeled Vehicle Fleet



96,210 Trucks

64,113 Trailers

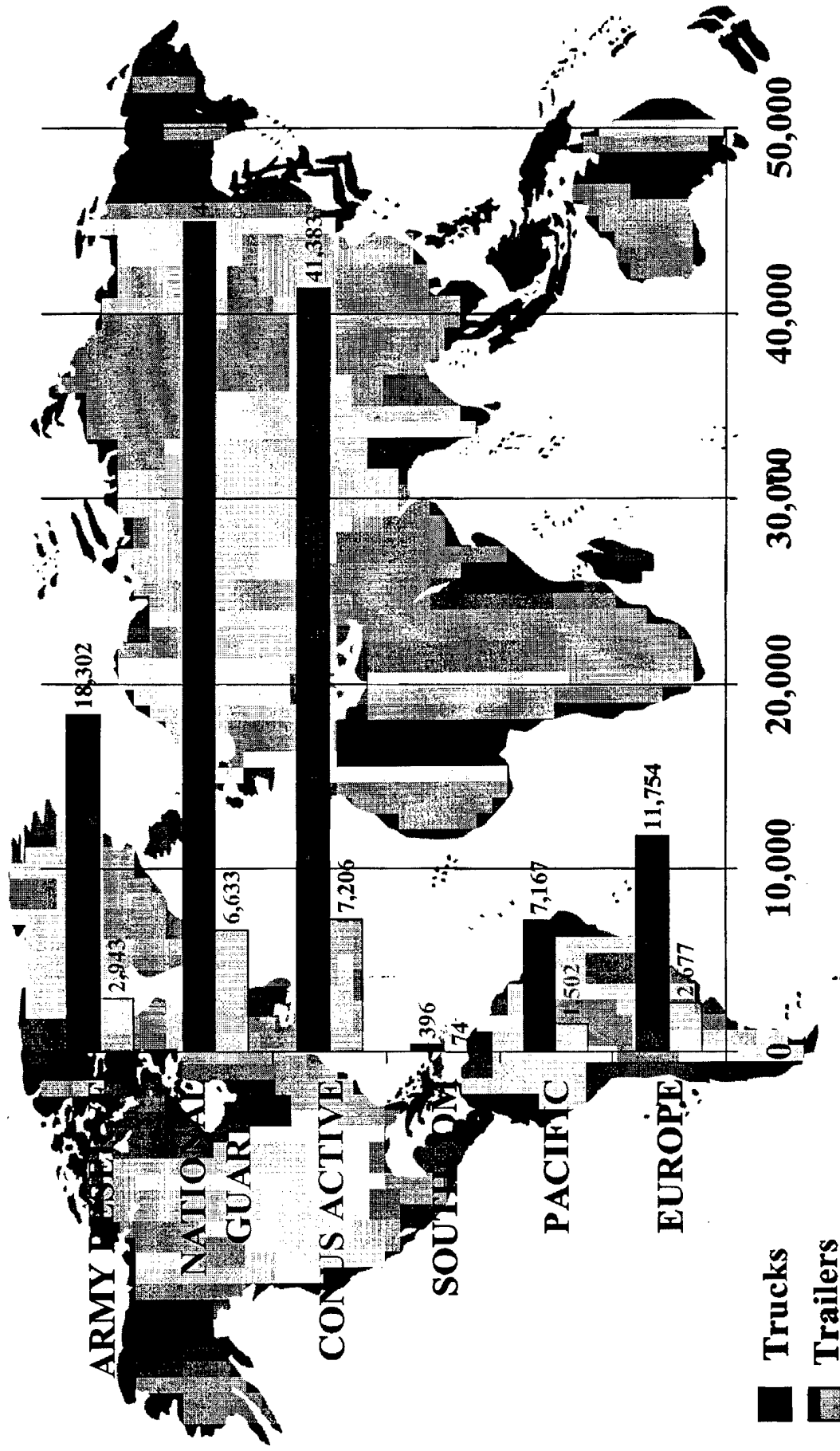




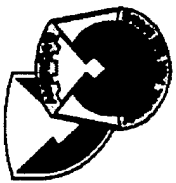
# Light Tactical Wheeled Vehicle Fleet

123,996 Trucks

21,035 Trailers

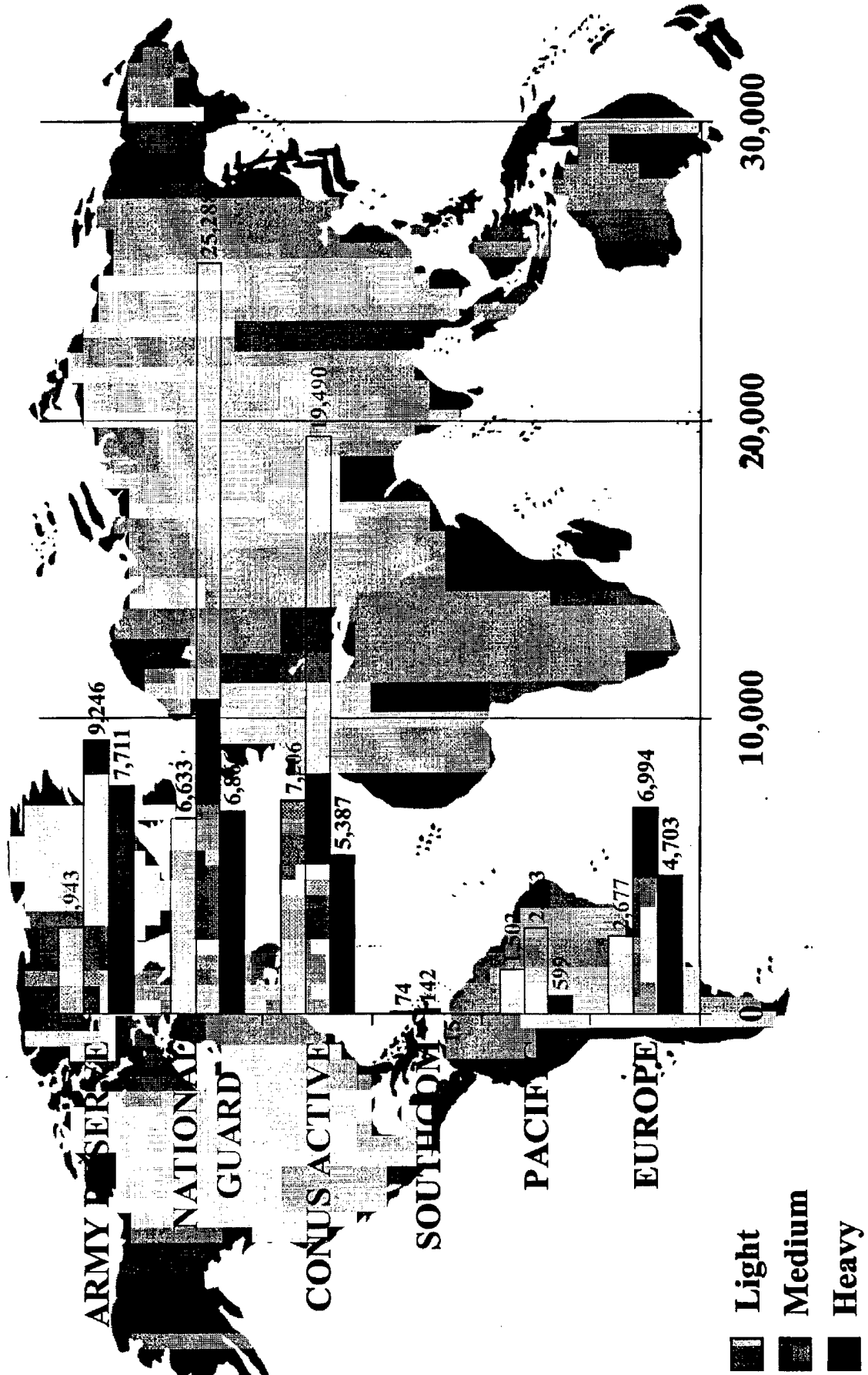


■ Trucks  
▨ Trailers



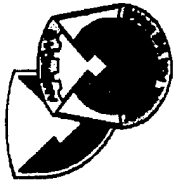
# Trailers

## 110,429



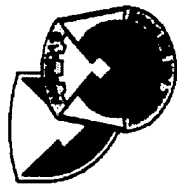
2/2/99

23/55

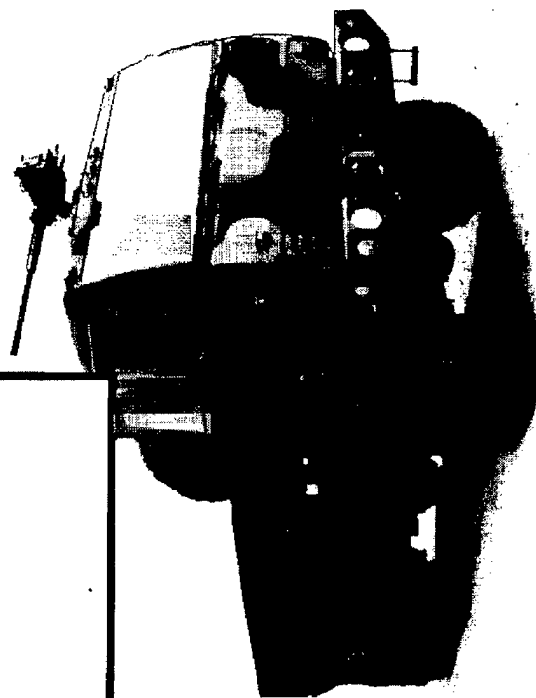
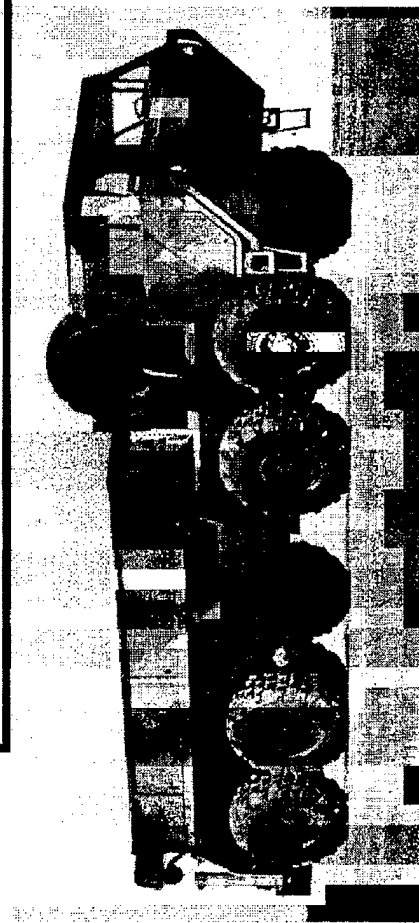


# **Tactical Wheeled Vehicles Operation and Support Cost**

- Fleet cost \$1.7 billion to operate and support in FY98
- Operation and Support Cost Drivers:
  - Labor/ Mechanic
  - Parts (Engines, Tires, Batteries, etc.)
  - Petroleum, Oil and Lubricants



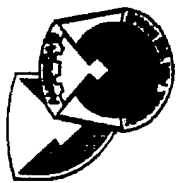
# Tactical Wheeled Vehicle Procurement



2/2/99

25/55

Committed to Excellence  
262



# Building to the 21st Century Maintaining Capability



**Initial Buy**

**"New Buys" w/Modifications.**

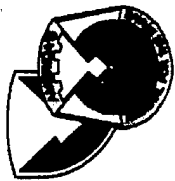
**Rebuild/  
Remanufacture**

**Upgrade  
Rebuild  
Remanufacture  
Modernize  
through Spares**

**Future Tactical  
Wheeled Vehicle**





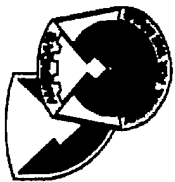


# Tactical Wheeled Vehicle Projected Fleet Procurements

2/2/99

27/55

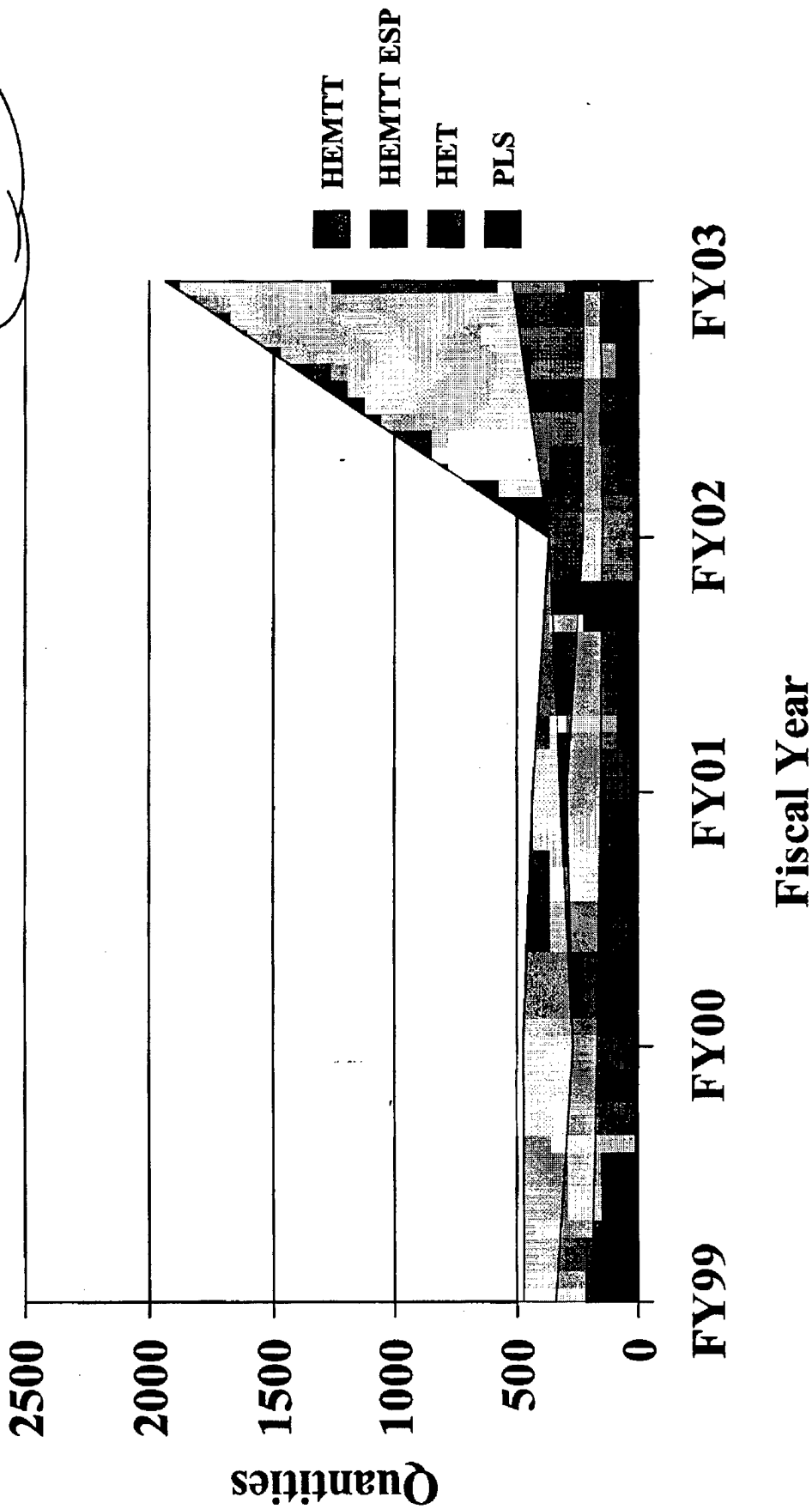
*Committed to Excellence*

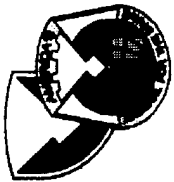


# Heavy Tactical Wheeled Vehicles Production/ESP



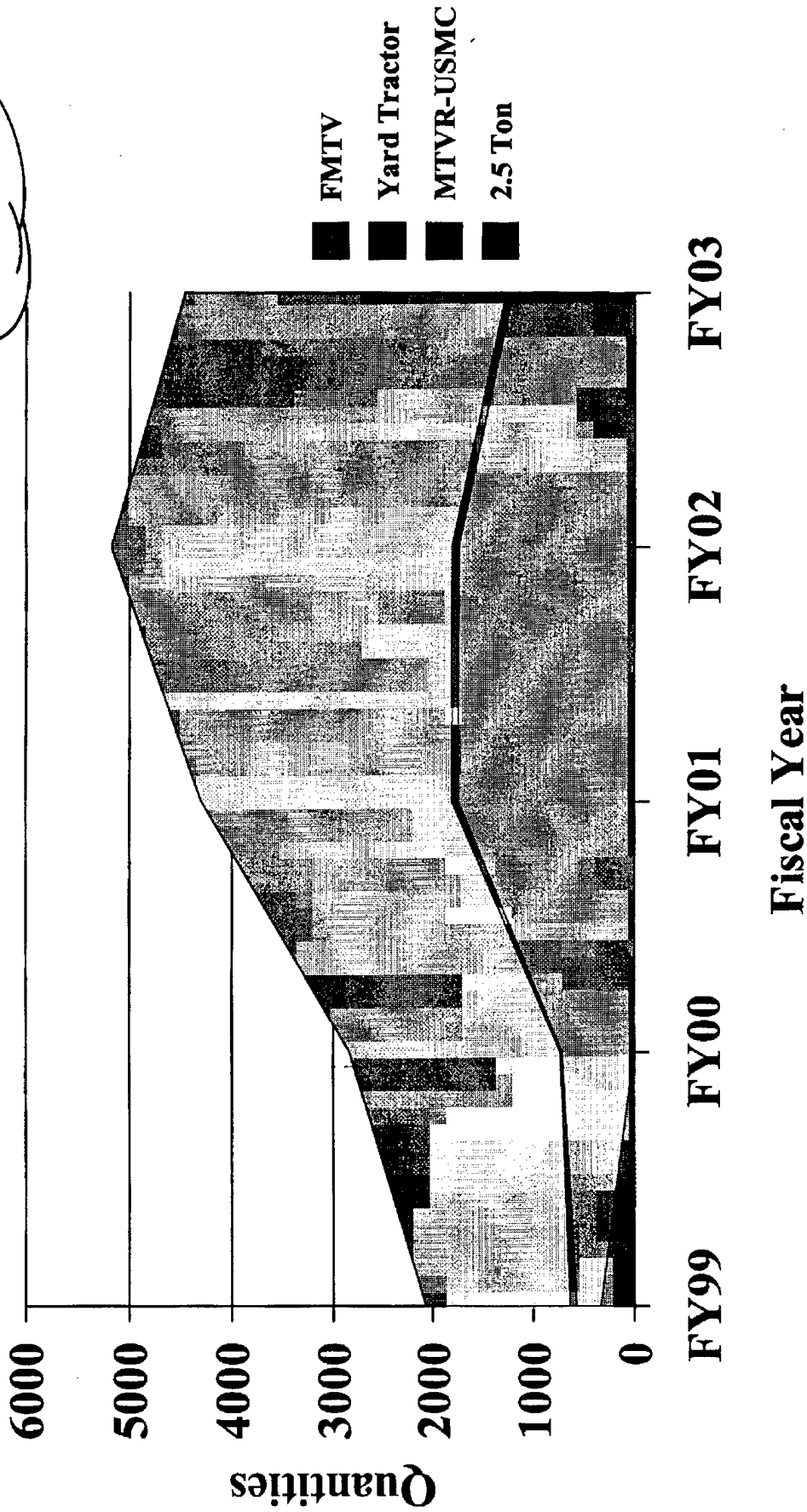
\$1.04B

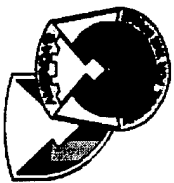




# Medium Tactical Wheeled Vehicles Production/ESP

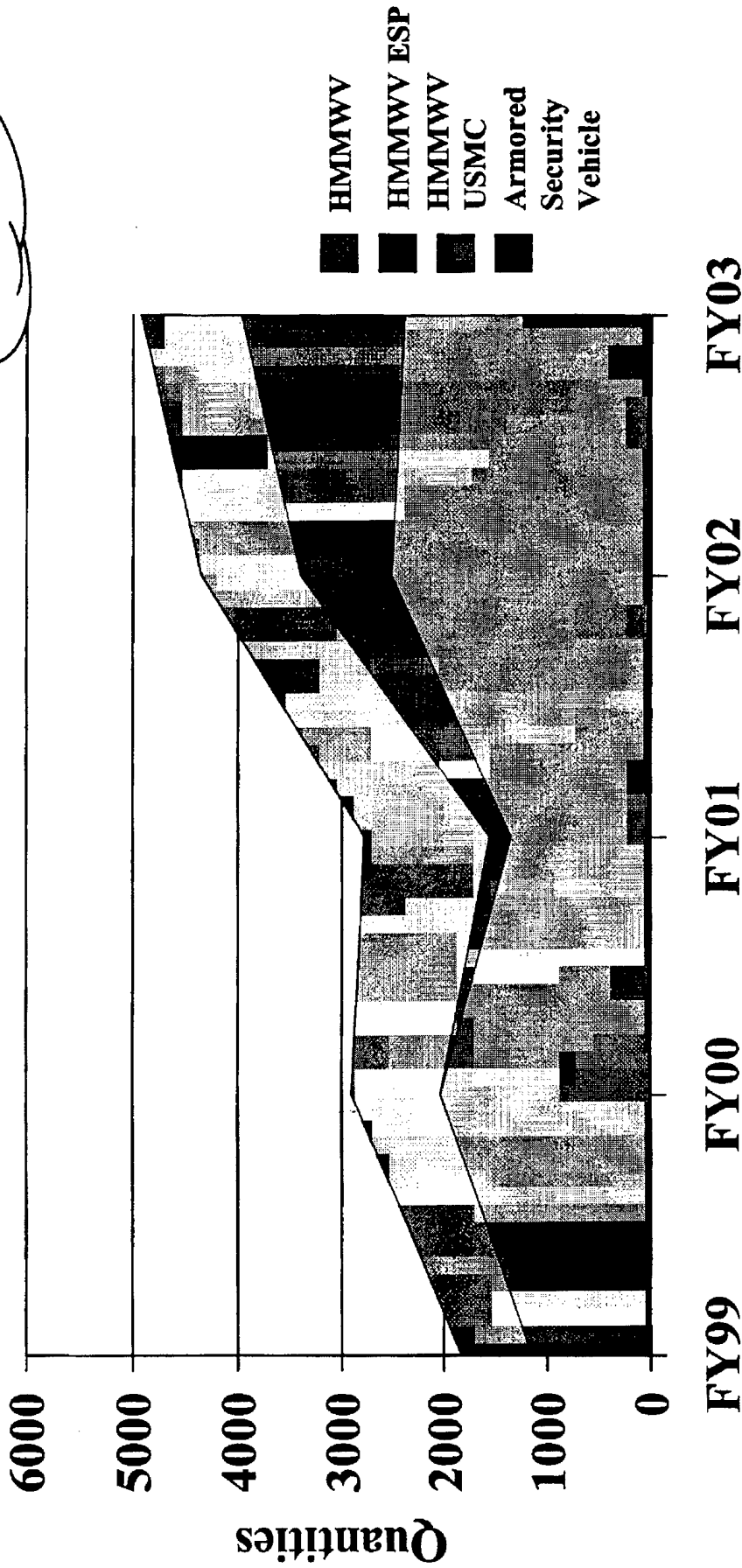
\$3.7B

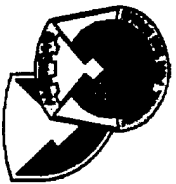




# Light Tactical Wheeled Vehicles Production/ESP

\$722M

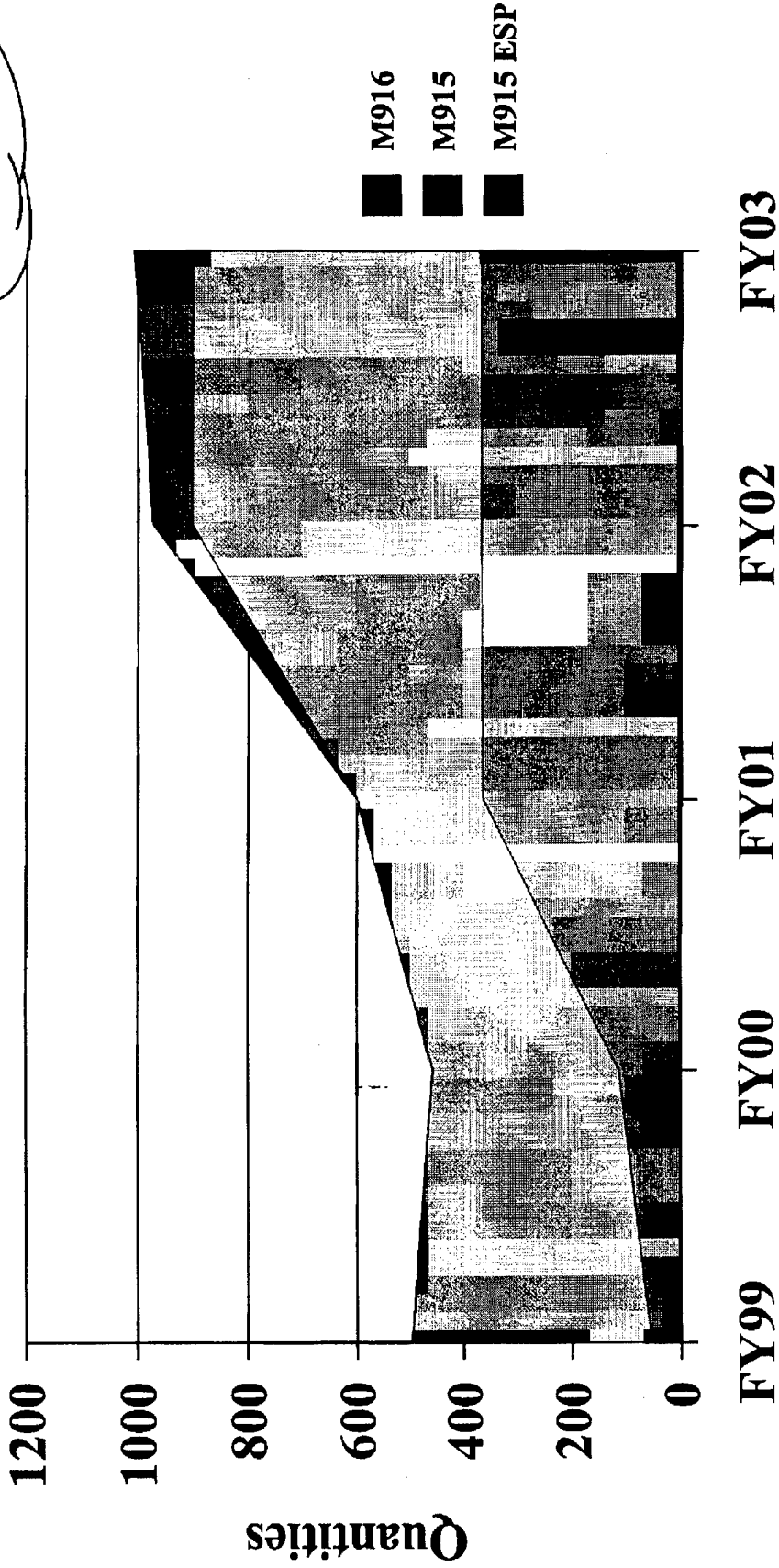


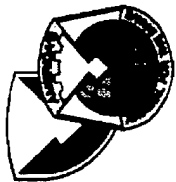


# Line Haul Trucks Production/ESP



\$403M

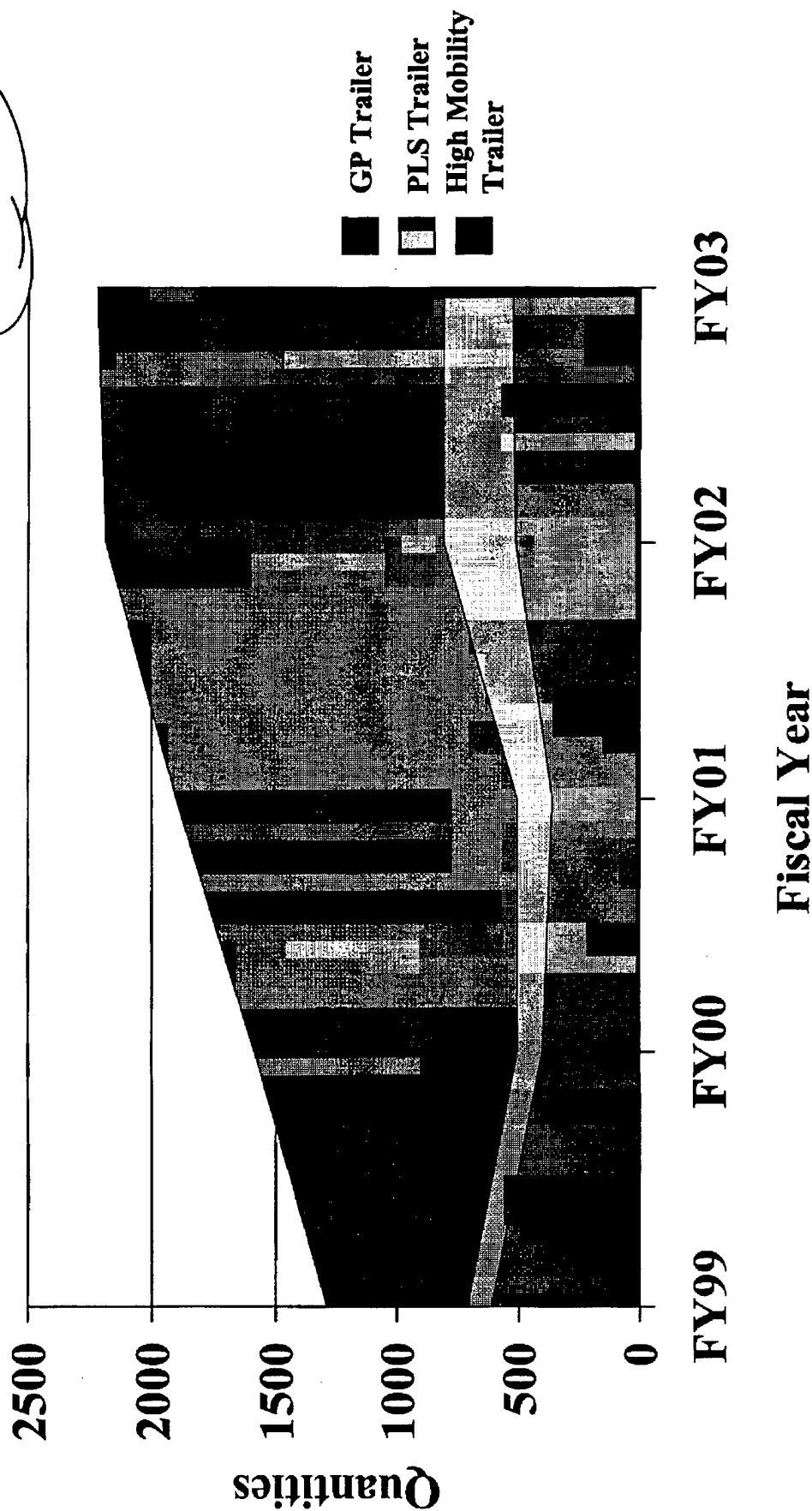




# Trailers Production/ESP

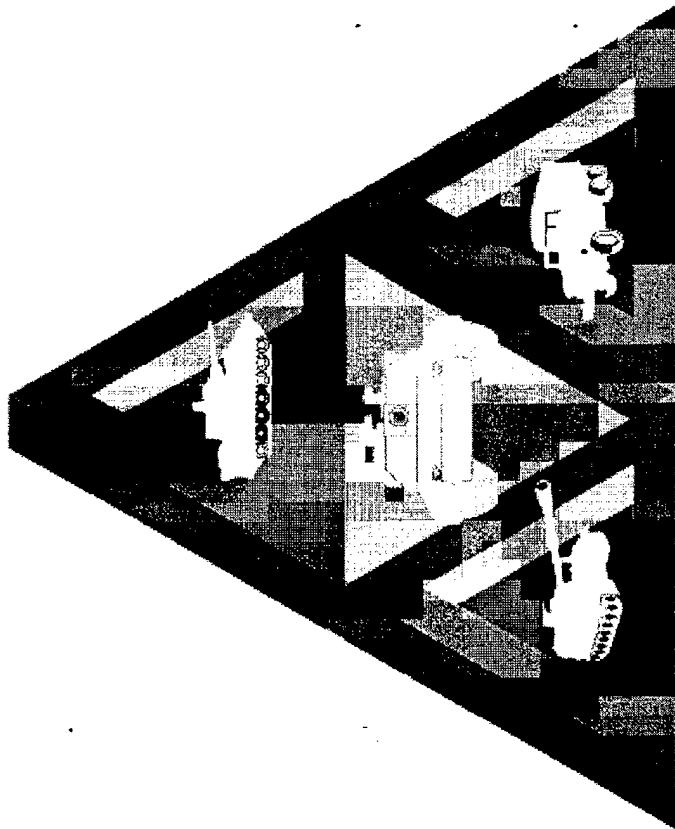


\$4.86M





# TACOM & Tactical Wheeled Vehicles



# T A R D E C

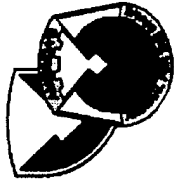
## Research, Development & Engineering

2/2/99

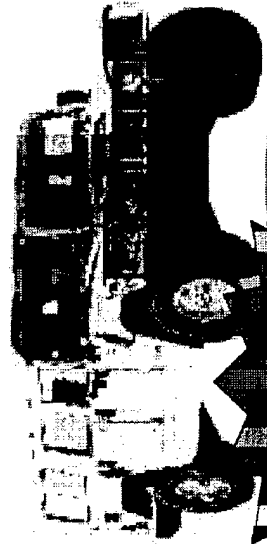
33/55

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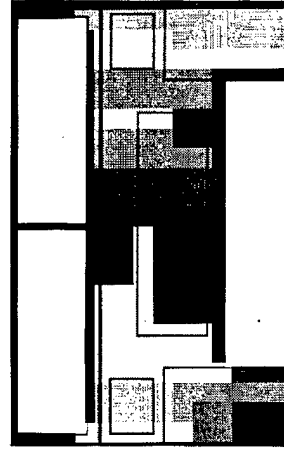
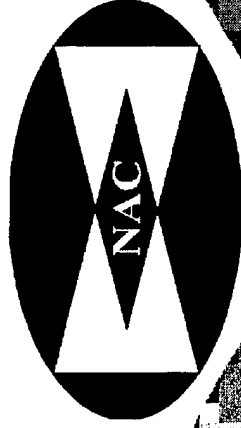
2/0



# Commercially Based Tactical Truck (COMBATT)



**Military  
Needs**



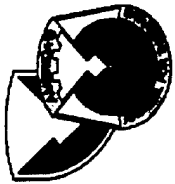
**Next Generation Light Tactical Truck**

2/2/99

34/55

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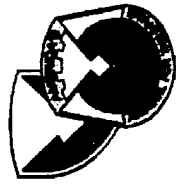


# What COMBATT is



- A DEMONSTRATION of the ability to merge commercial automotive technologies and military NEEDS for the NextGen LTV and HMMWV technology insertion.
- Dual Use Application Program Resulting from Broad Agency Announcement.
- Participation by OSD, TACOM and:

<u>Company</u>	<u>Platform</u>
Chrysler	2000 Ram
Ford	1998 F350
AMG	1998 HMMWV
- Managed jointly by NAC and ERIM International.



# Propulsion System Requirements 21st Century Truck

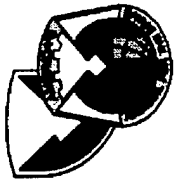


## Needs/Requisites

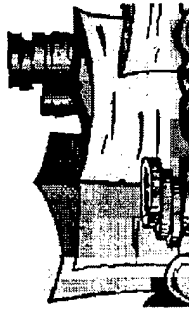
- Increased Power Density
- Improved Durability
- Improved Fuel Efficiency
- Legislative Compliance
- Commercially Based

## Technological Solutions

- Advanced Materials
- Smart Sensors
- Digital Controls/  
Architecture
- Functional Integration
- Hybrid Approach
- Fuel Cells
- Alternative Fuels



# OSCR Program

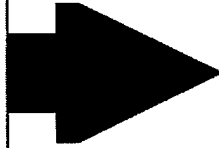


Operation and Support Cost Reduction is....

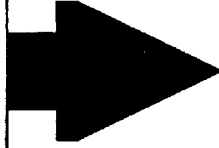
Anything and everything that lowers the recurring cost of owning, maintaining, or sustaining the system



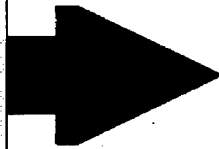
HTI SAVE



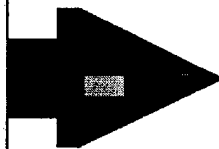
Major



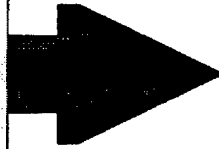
Value



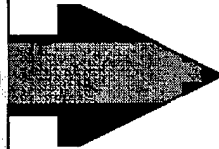
PIPs



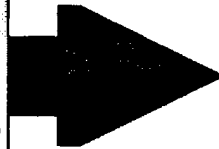
RM&S



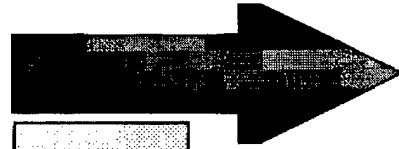
SMA-



Tech



MTS



Mods Engr

OSCR

Base



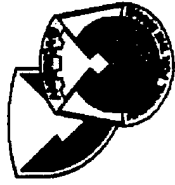
# TACOM's SMA OSCR PROJECT SUMMARY



## • Successful Projects:

M915A4 Engine & Suspension Assy	M109/M992 Fuel Cells
Redesign HMMWV Soft Top Doors	Gunfire Simulator Circuit Card
Calcium Maintenance Free Battery	M119A1 Spare Parts Redesign
Galvanization of M939 Series Hood	Alternate Power Sys for SUSV
Replace Tritium Lamps w/LEDs	ROWPU Improvements
Ceramic Material Plasma Spray	AH64A Improved CRT Cable Strain Relief
M295 Equip Decontamination Kit	AH64A CRT Wire Splice
Recoil Exerciser 155m Howitzer	Improved Track Lock BCS
AGT 1500 Eng Blade Repair	M10 Charger Simplification
Smart Battery and Charger	One-Piece Periscope (M17)
Fiber Optic Gyro, M2	AH-64A Helmet Cable Improvement
Drain Plug Kit Replacement BFW	M203A1 Grenade Launcher Handguard
Improved Moldboard Ext BCS	Alt. Source for Variable Speed Fan, M113

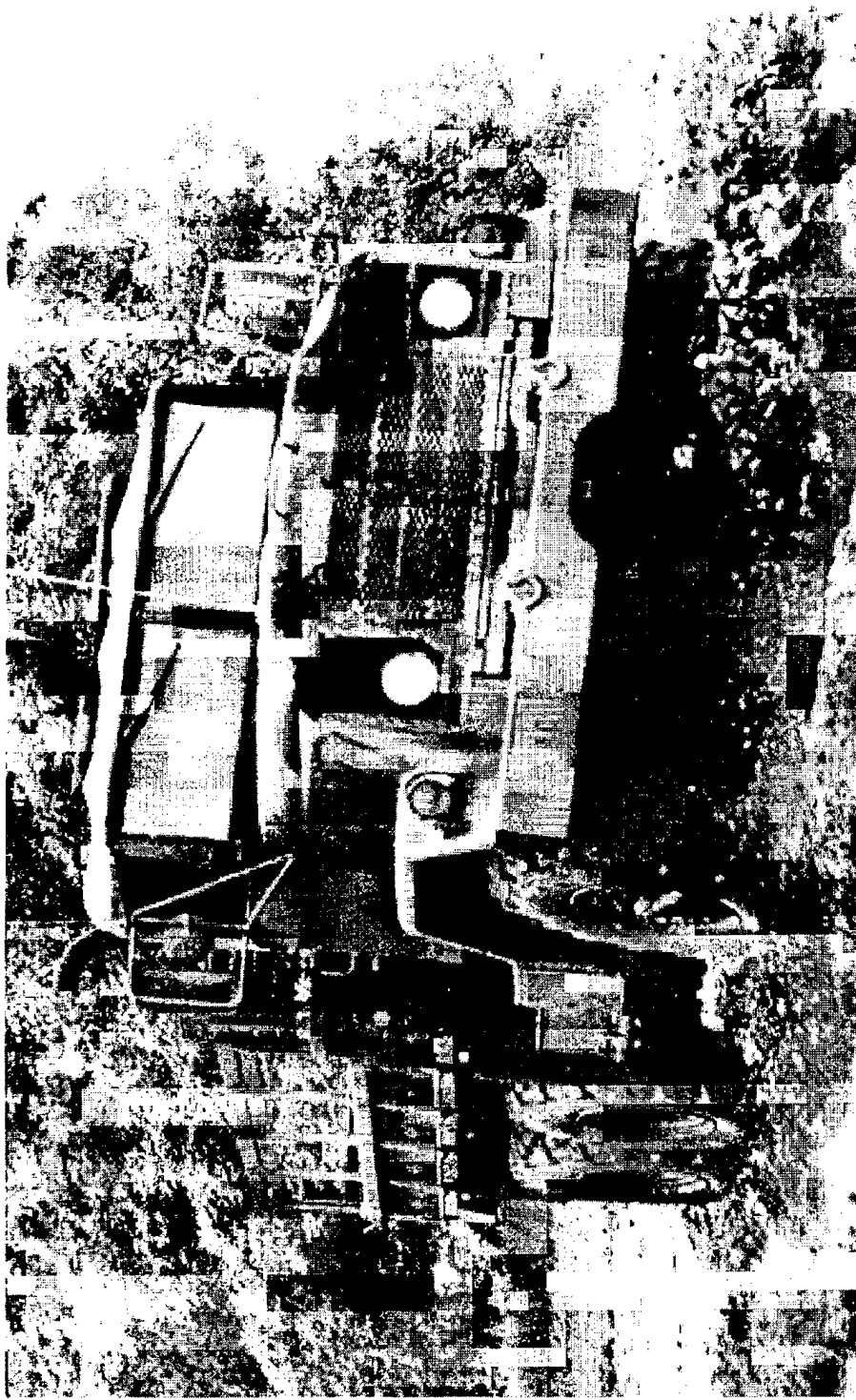
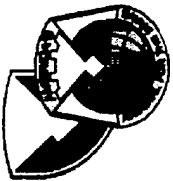
- **26 Initiatives Funded with \$6.6M Investment (FY96-99)**
- **Projected Field Savings for POM (FY98-03) \$34.5M**



# Blueprint For Change: Standardization Reform Effort

Active	<i>Yesterday</i>	<i>Today</i>
Specifications and Standards	5,147	1,075
Performance Specifications	--	157
Commercial Item Descriptions	--	127

**Highlights:** New Non-Government Standards -- 24  
Cancelled 1,057 documents      Inactivated 1,832 documents



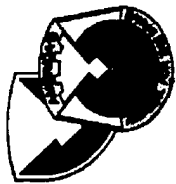
# TACOM and Tactical Wheeled Vehicle Sustainment

2/2/99

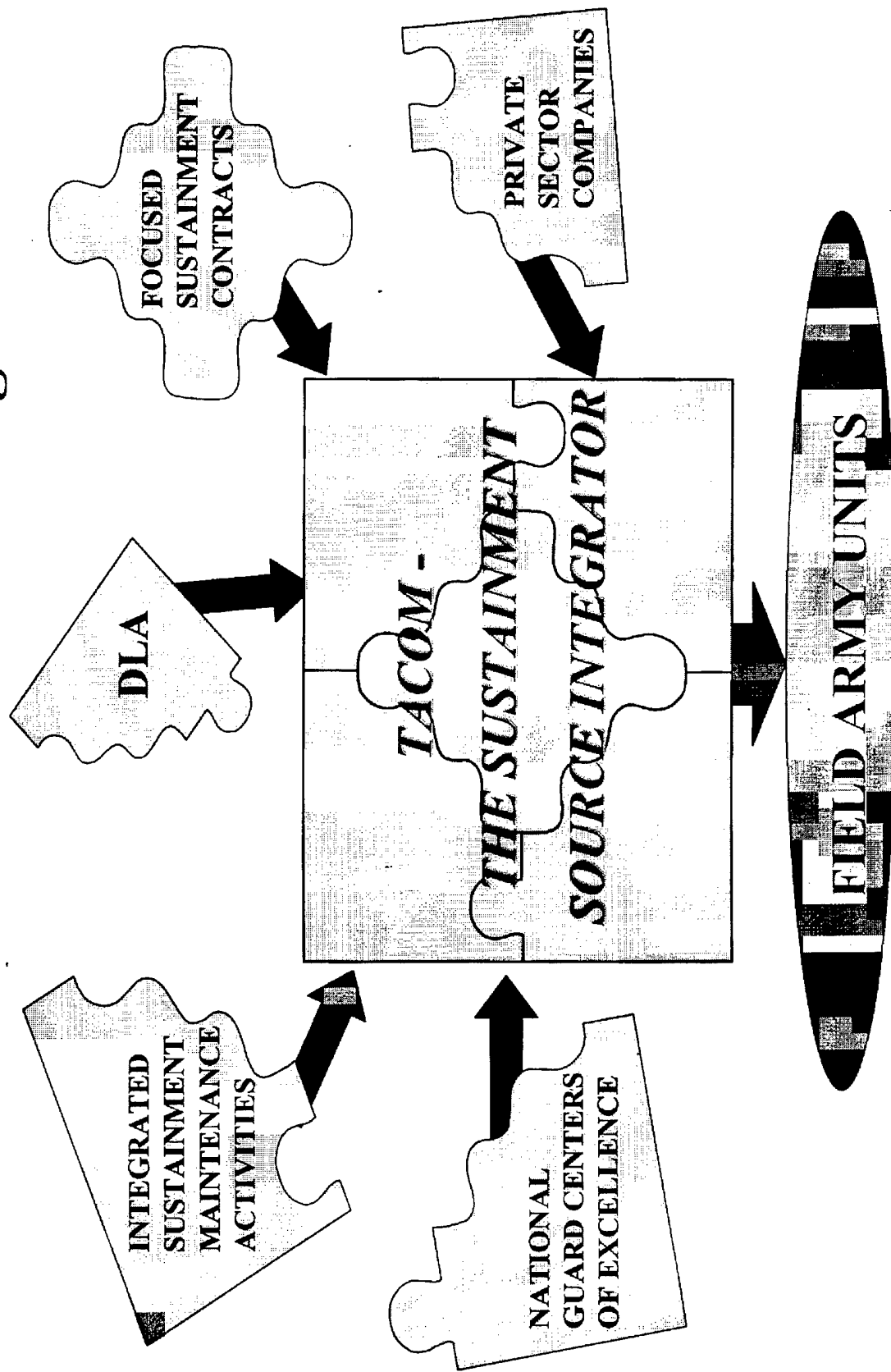
40/55

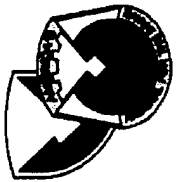
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# Tactical Wheeled Vehicle Sustainment Challenges





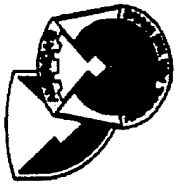
# Tactical Wheeled Vehicle Sustainment Challenges



## WHAT WE'RE DOING:

INTEGRATED, MULTI-FUNCTIONAL COMMODITY BUSINESS UNITS (CBU)  
SUSTAINMENT SOURCE INTEGRATOR - FOCUSED SUSTAINMENT  
MANAGE FROM THE CUSTOMER'S PERSPECTIVE - READINESS CELL  
INCREASE LONG TERM CONTRACTS WITH OUR VENDORS  
BUY "RESPONSE" NOT INVENTORY  
REDUCE COSTS/REDUCE SURCHARGE  
REDUCE ADMINISTRATIVE AND PRODUCTION LEAD TIMES  
REDUCE INVENTORY  
REDUCE BACK ORDER AGE



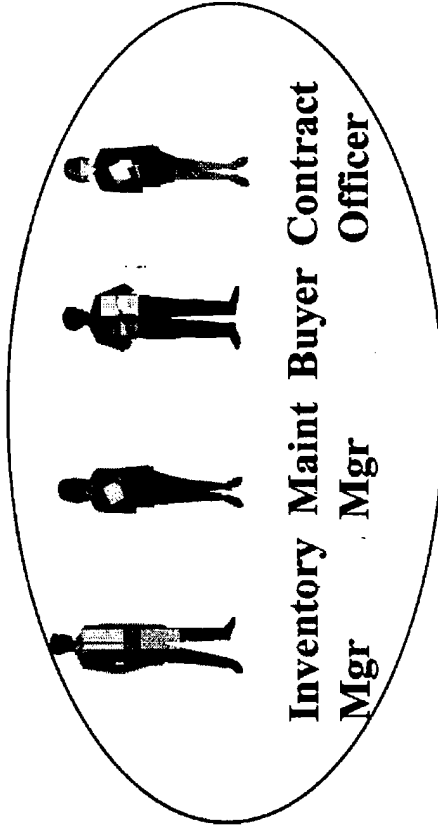


# Commodity Business Unit (CBU) Multi-Functional Team Development



## BEFORE

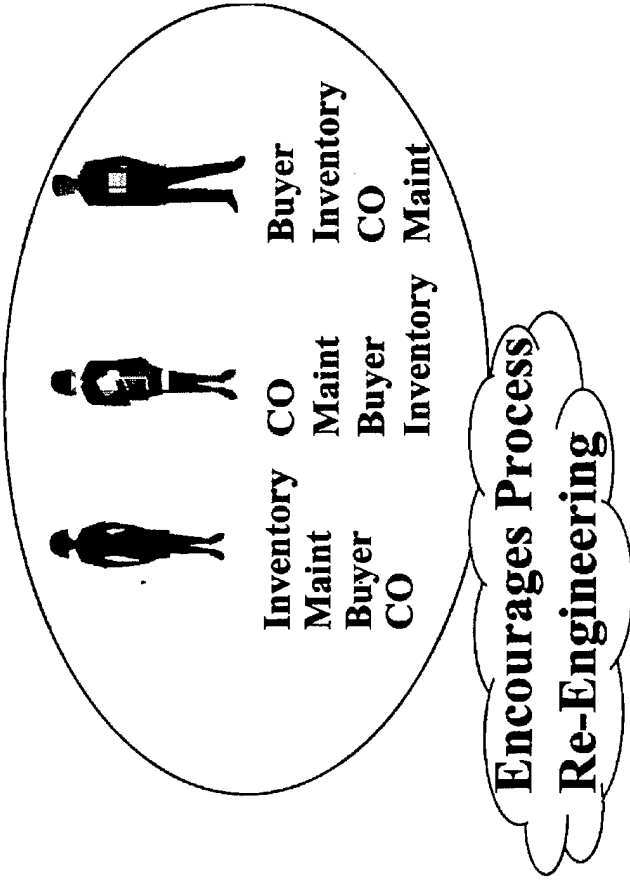
Multi-Functional  
Teams made up of  
Specialized Associates



Reinforces  
Stovepipes

## AFTER

Multi-Functional Teams  
made up of Multi-  
Functional Associates

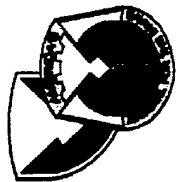


Development to Multi-Functionalism: Osmosis is not good  
enough.

2/2/99

4/3/55

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# NATIONAL MAINTENANCE FOCUS



## CURRENT SITUATION IS ...

### *An Army Sustainment Stampede...*

- PEO INITIATIVES...
- AMC MAJOR SUBORDINATE COMMAND ACTIONS AND INITIATIVES...
- FIELD ARMY INITIATIVES...

e.g.,

**PALADIN BUSINESS CASE STUDY;**

**M1A2 CLS;**

e.g.,

**Traditional five-level maintenance operations**

**Legacy system support and sustainment**

**Integrated Logistics Support planning and execution**

e.g.,

**ISM and SRA proliferation; independent repair programs; post-camp, station individual contracts for support**

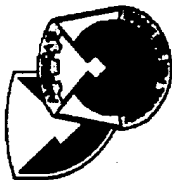
**"CURRENT NEED IS FOR A SUSTAINMENT SOURCE INTEGRATOR ..."**

2/2/99

44/55

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# NATIONAL MAINTENANCE FOCUS



## WHAT IS FOCUSED SUSTAINMENT?

**LEVERAGE TACOM CONTRACTING  
EXPERTISE BY SELECTING "BEST OF  
BREED" FROM OVER 40 STOVEPIPES**

**Multiple awards; multiple  
contractors**

**Work assignment protocols to  
select "best" source for each  
deliverable**

### IDIQ CONTRACT INSTRUMENT

- EQUIPMENT EVALUATION
- DIAGNOSTICS
- TECHNICAL ASSISTANCE
- WRENCH TURNING
- TRAINING
- PARTS SOURCING
- MATERIEL FIELDING
- LOGISTICS DATABASE UPDATES:
  - PROVISIONING DATA
  - TECHNICAL MANUALS
- RECOMMENDED CHANGES TO  
EQUIPMENT (EIR/ECP)

**Priced by hour...  
Buy only hours needed.**

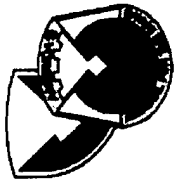
**"TACOM - SUSTAINMENT SOURCE INTEGRATOR"**

2/2/99

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45/55



# DCG for CORPORATE MGMT

## DIRECTORATE for READINESS OPERATIONS

### WORLDWIDE FIELD SERVICES

- Technical Advice Assist
  - Field Problem Reporting
  - Wholesale to Retail Interface
- Rock Island, IL  
Warren, MI  
SCR CONUS  
SCR Far East  
SCR USAREUR

### FLEET AND UNIT MATERIEL READINESS

- Fleet Readiness Management
- Current Plans
- Future Concepts
- Fleet Planning
- Data Management

- Materiel Readiness Management
- Unit Readiness (Regional Teams)
- Analysis- Marketing
- Field Problem Resolution

CONUS CENTRAL  
CONUS WEST  
CONUS EAST  
FAR EAST  
EUROPE

### OPERATIONS CENTER

- Customer Support
- 1-800-TACOM
- Off Line Requisitions

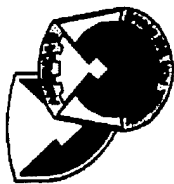
- OPLANS
- LOGPLANS
- LSE Planning

Warren, MI  
Rock Island, IL  
46/55

2/2/99

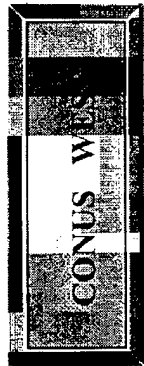
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# UNIT MATERIEL READINESS TEAMS

## REGIONAL ALIGNMENT



### MCUs

- 2 Inf Div
- 172 Separate Inf Bde
- 25 Inf Div

### Non-Divisional Units

- 19 SUPCOM
- 17 Aviation



### MCUs

- 3 Arm Cav Rgmt
- 1 Bde / 25 Inf Div
- 3 Bde / 2 Inf Div
- 1 Special Forces Grp

### Non-Divisional Units

- 11 Armored Cav Rgmt
- National Tng Center



### MCUs

- 1 Cavalry Div
- 3 Bde / 1 Arm Div
- 4 Inf Div
- 10 Special Forces Grp
- 1 Bde / 1 Inf Div

### Non-Divisional Units

- 11/31/35/108 ADA
- 3 Corp Arty
- FA Tng Ctr
- 13 COSCOM
- Ft. Clayton PANAMA



### MCUs

- 2 Arm Cav Rgmt
- 3 Inf Div
- 10 Inf Div
- 101 Air Assault Div
- 82 Airborne Div
- 3/5/7 Special Forces Grp
- 75 Ranger Rgmt
- 160 Spec Ops Avia Rgmt

### Non-Divisional Units

- 20 Engineering Bde
- 1 COSCOM
- 159 Aviation Bde



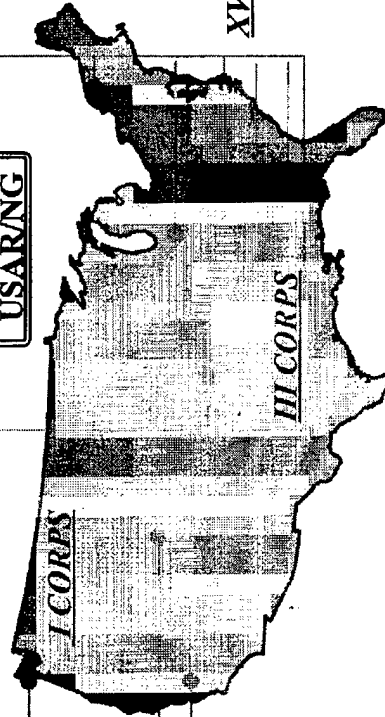
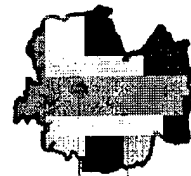
XVIII CORPS

### MCUs

- 1 Inf Div
- 1 Arm Div

### Non-Divisional Units

- 69 Air Defense Arty
- 21 TAACOM
- SETAF
- Task Force 4-64
- Joint Forge
- V CORPS

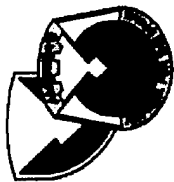


2/2/99

47/55

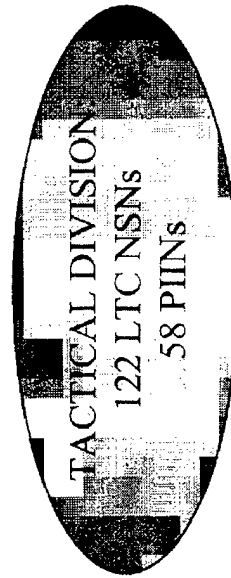
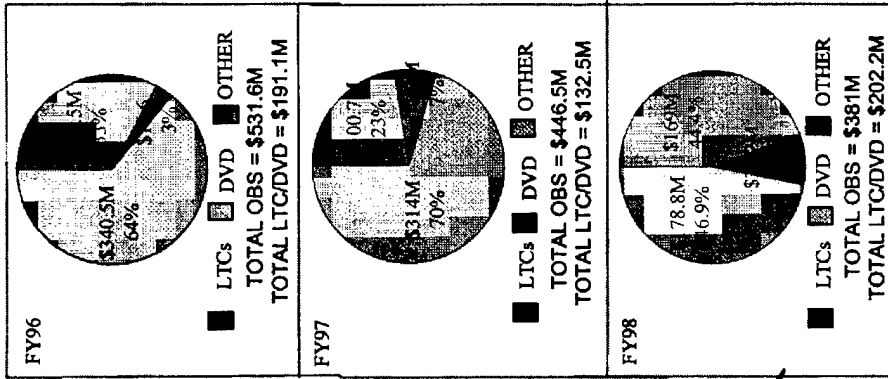
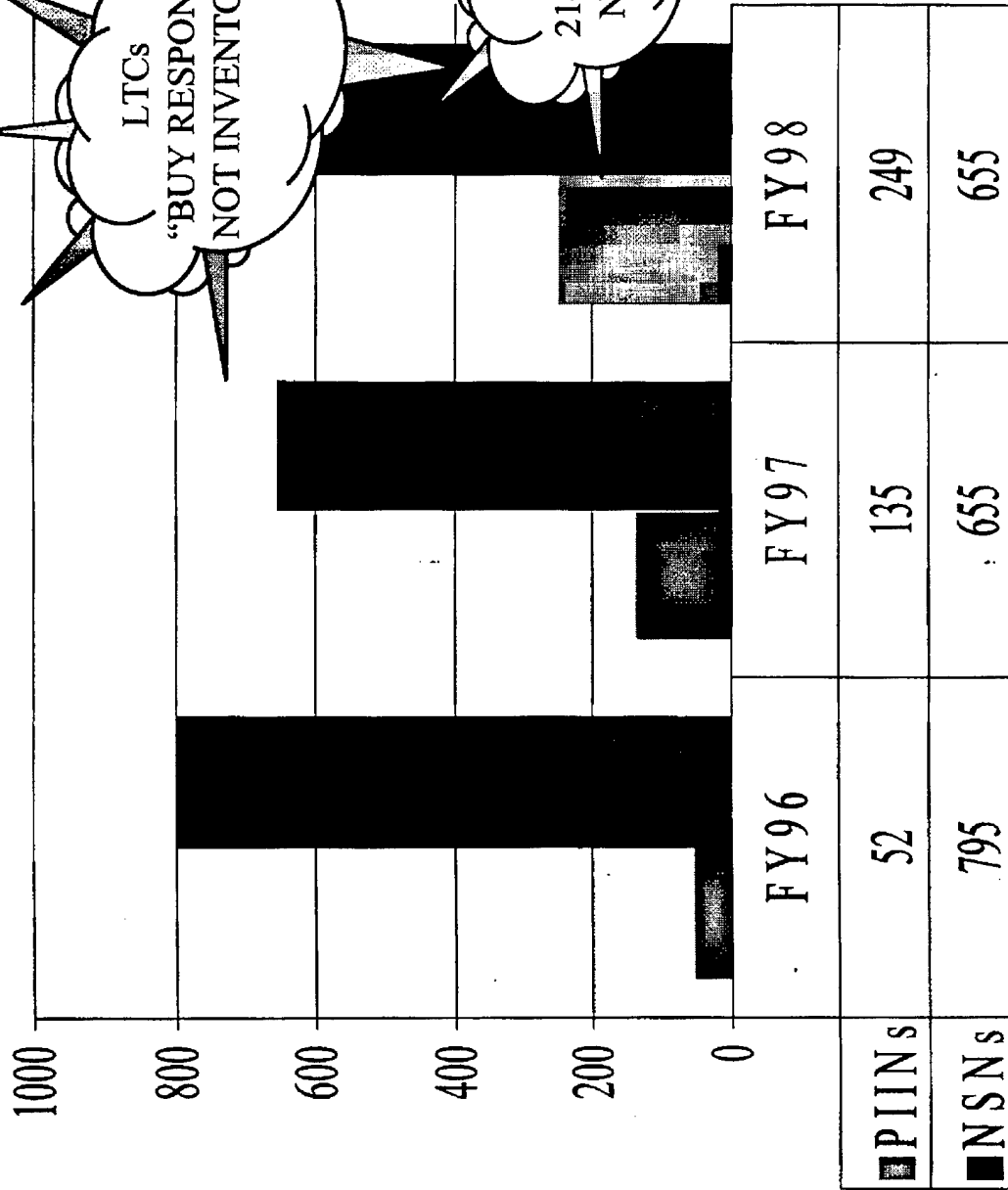
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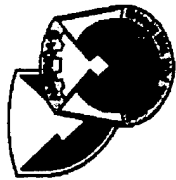
284



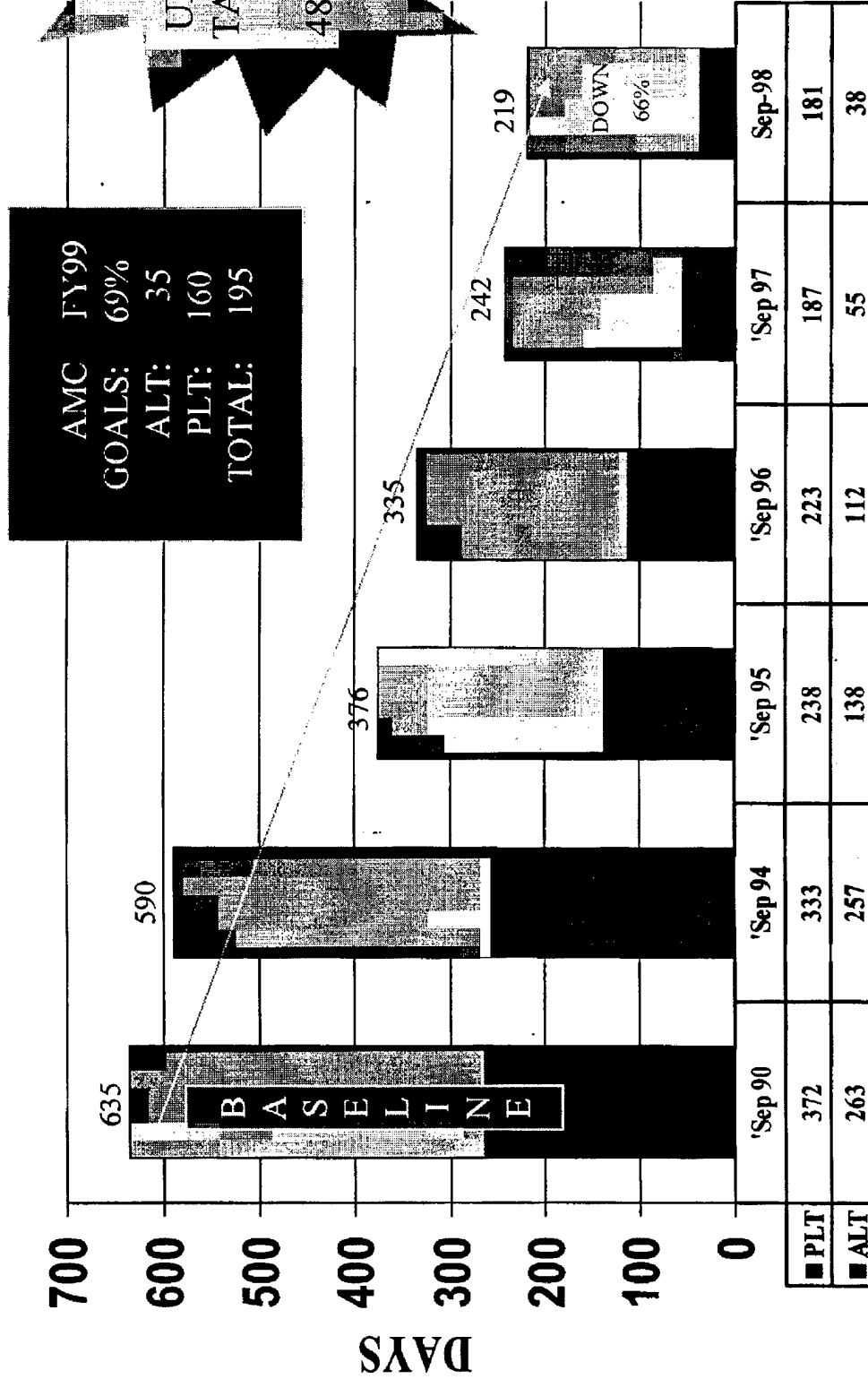
# TACOM ALT/PLT REDUCTION PROGRAM LONG TERM CONTRACT

## PERFORMANCE





# ALT/PLT REDUCTION PROGRAM TACOM MILESTONES



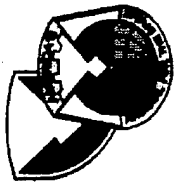
SOURCE DOCUMENT - Sep 98 STRAT

2/2/99

49/55

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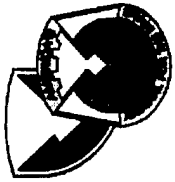
# We Need Your Help!

## Future Truck Technology Needs



- Propulsion
  - Fuel Efficient
  - “Clean”
  - More Power
- Suspension and Running Gear
  - Independent
  - Active/Semi-Active
  - Anti-Lock Brakes
  - Automatic Traction Control
- Wheels/Tires
  - Improved Run Flat
  - Central Tire Inflation System
  - Band Track
- Electronics
  - Situation Awareness
  - Movement Tracking System
- Improved Deployability
  - Reduced Weight
  - Reduced “Footprint”
- Extended Fleet Life
  - Diagnostics/Prognostics
  - Increased Corrosion Protection
- Safety
  - Collision Warning System
  - Crew Safety Protection
  - Improved Ergonomics

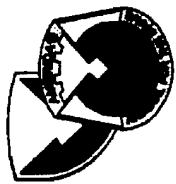




# Conclusions:



- Total cost of ownership is critical
  - Aging fleet
  - Operation and Support cost consideration
- TACOM is source integrator for TWV sustainment
- Must renew the fleet
  - Rebuild
  - Remanufacture
  - Buy new



# What is a soldier without TACOM?



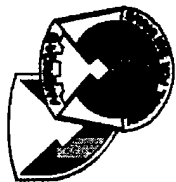
## MAKING TECHNOLOGY WORK FOR SOLDIERS

2/2/99

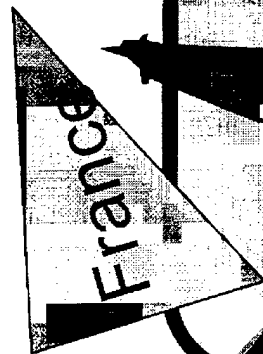
52/55

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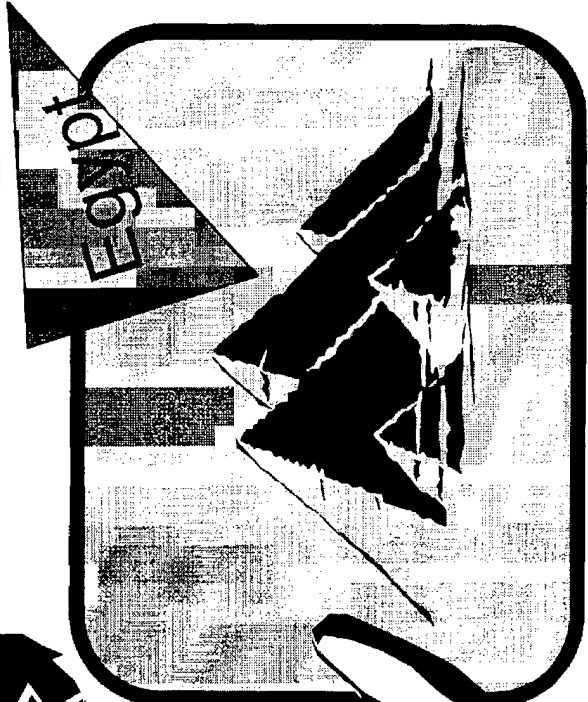
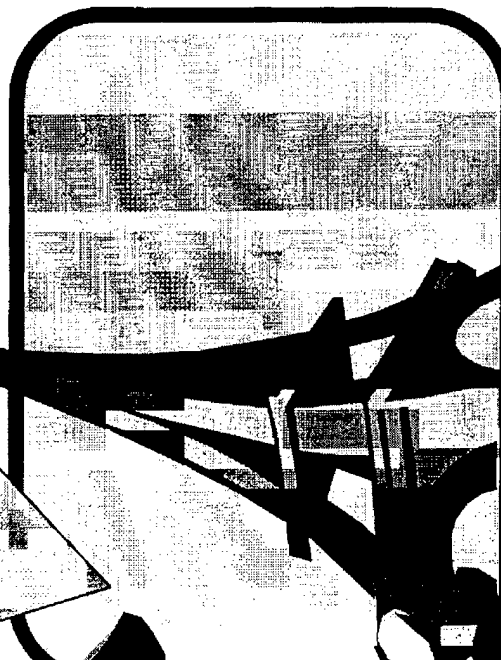
# A Tourist!



U.S.A.

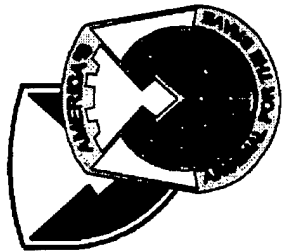


France



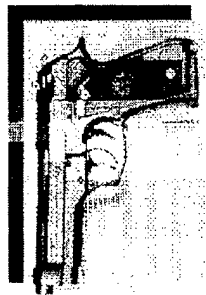
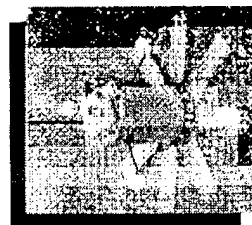
Egypt



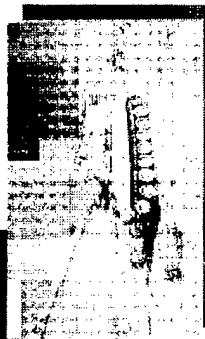
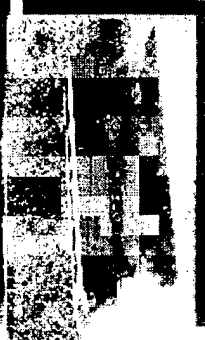
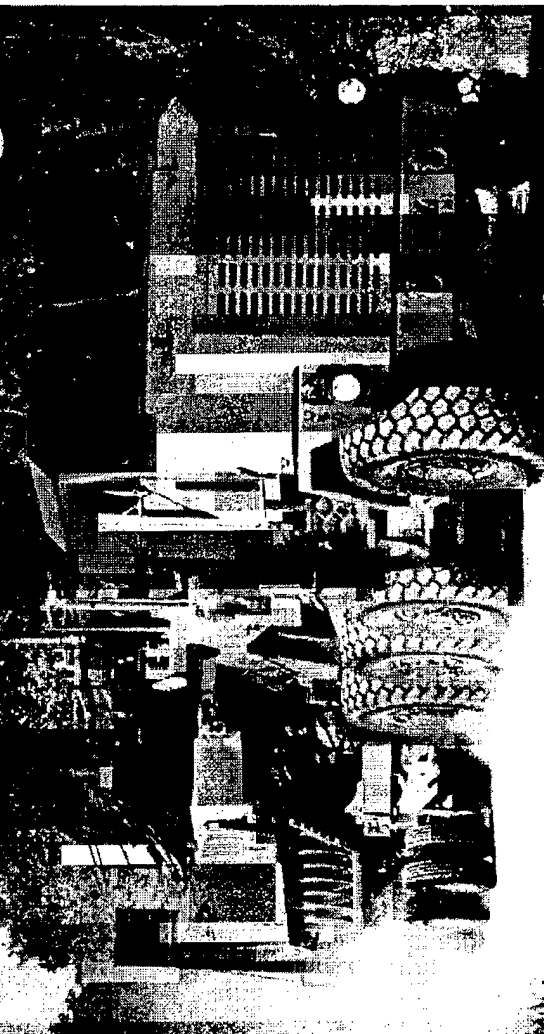


# ZACOM

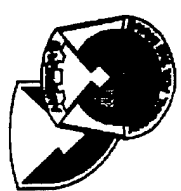
*Mobility and Firepower  
for America's Army*



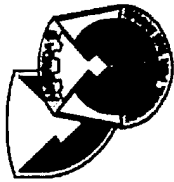
## Keep On Trucking



*Mobility and Fire Power for America's Army*



# Backup Charts



# ON HAND INVENTORY

AWCF CLASS 2,4,9  
BY CATEGORY

## INVENTORY DOLLAR VALUE

### STRAT

- ACTIVE
- ECONOMIC RET
- CONTINGENCY RET
- POTENTIAL DOD EXCESS

### SSIR

- ACTIVE
- ECONOMIC RETENTION
- CONTINGENCY RETENTION
- POTENTIAL DOD EXCESS
- IN-TRANSIT

## INVENTORY BY LOCATION

- ANNISTON
- SAN JOAQUIN
- ROCK ISLAND
- NEW CUMBERLAND/SUSQUEHANNA
- RED RIVER
- LETTERKENNY
- OTHERS

4000 3000 2000 1000 0 \$ 0 1000 2000 3000 4000

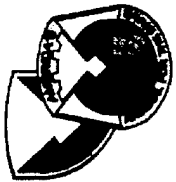
IN MILLIONS

O N D J F M A M J J A S

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57/55

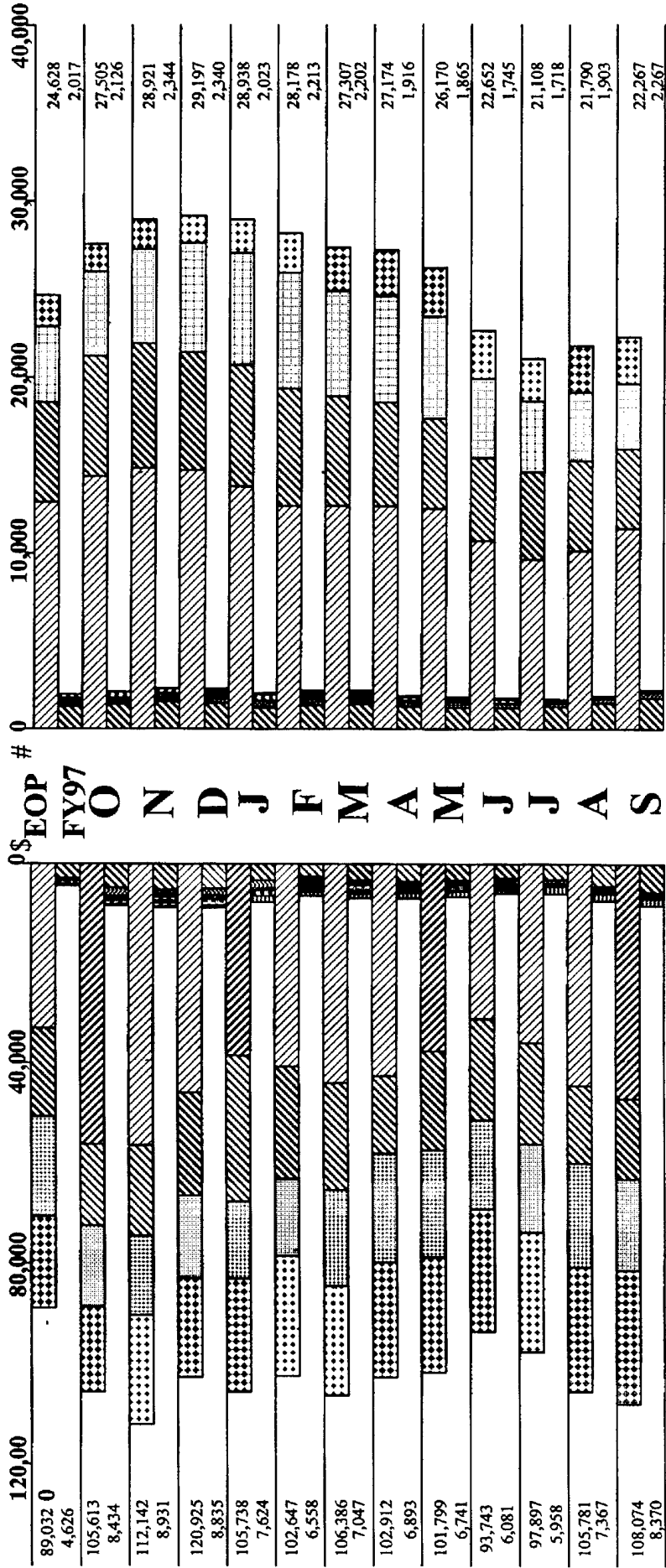
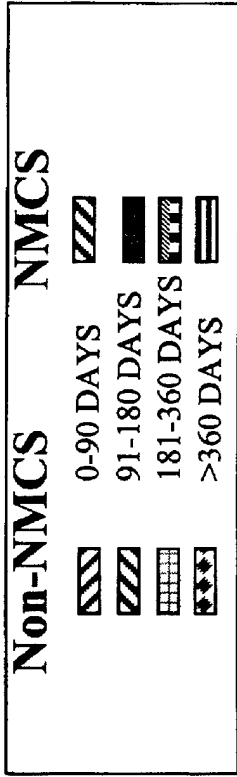
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# DOLLAR VALUE of STOCKED BACKORDERS vs. STOCKED BACKORDER LINES



Dollar Value of backorders (thousands) Backorder Lines

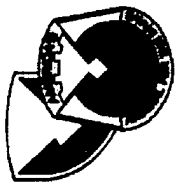


2/2/99

EOP = End of Period

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# DORMANT STOCK

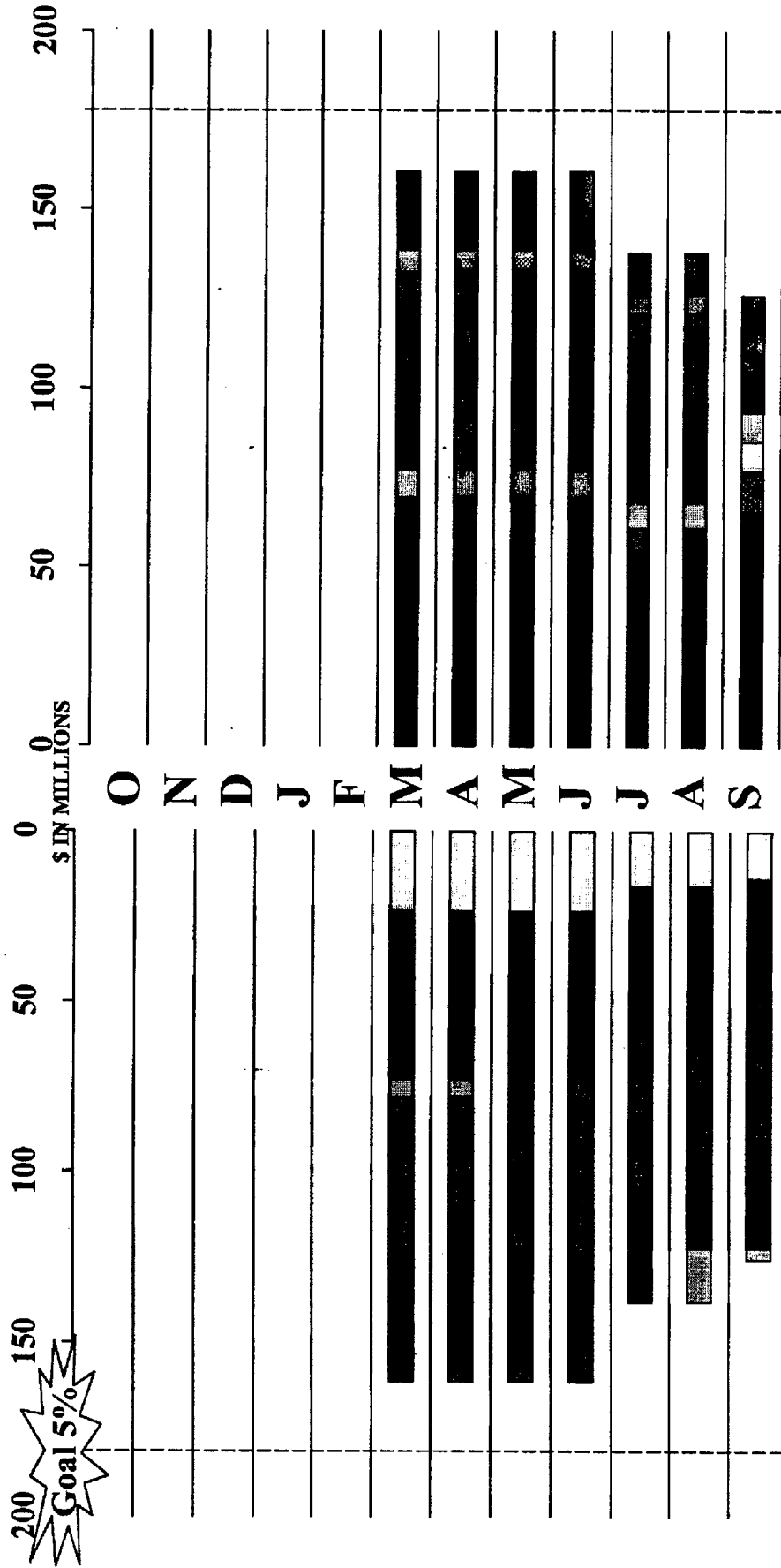
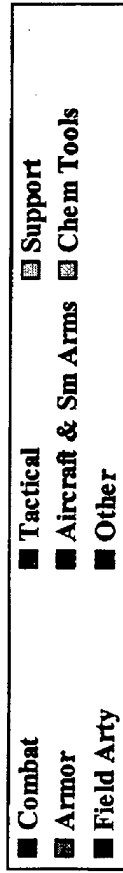
Supply Class 2, 4, 9



DOLLARS BY LOCATION



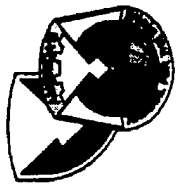
DOLLARS BY PLE/PRODUCT CENTER



Goal 5%  
59/53

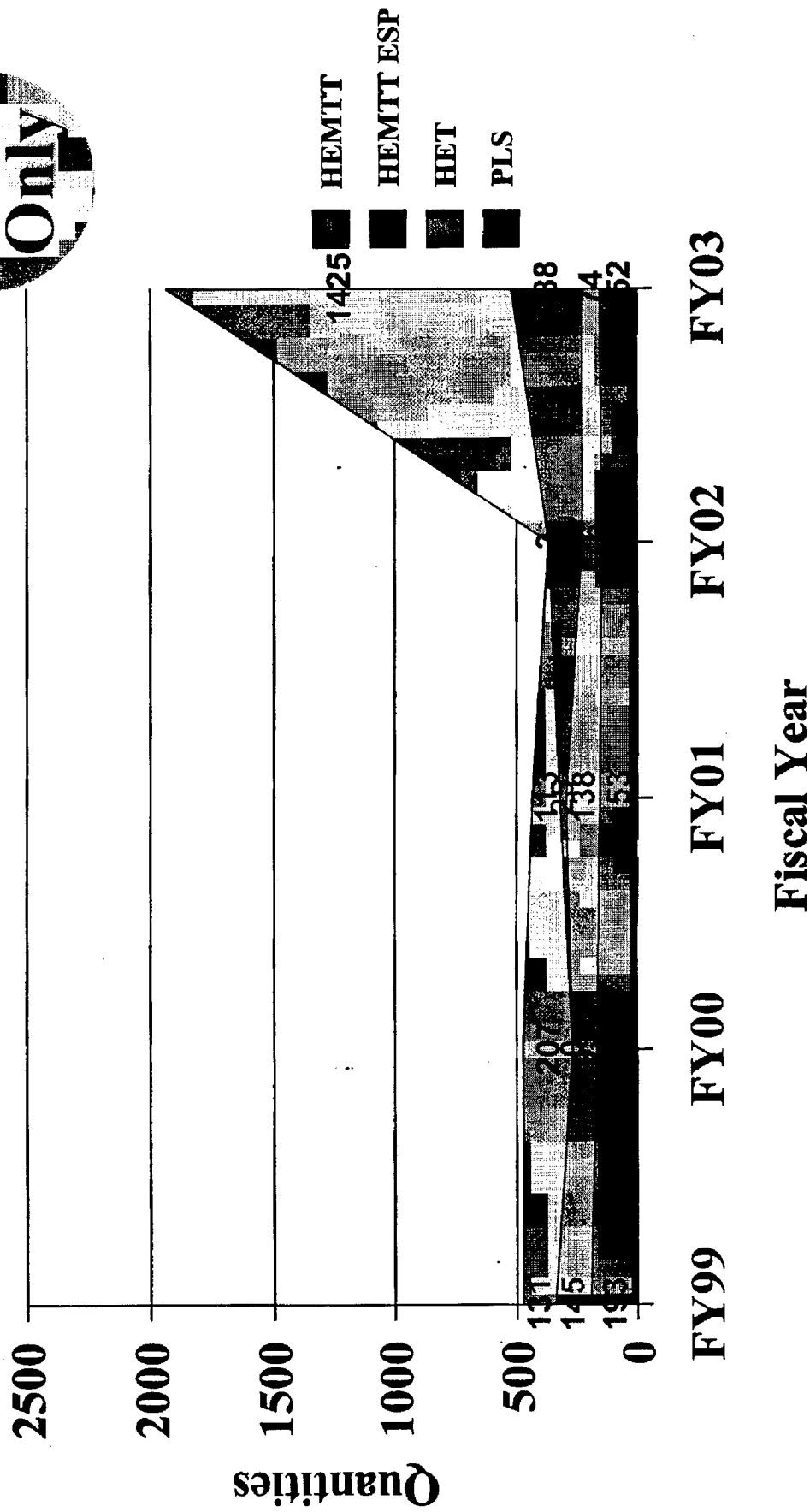
2/2/99

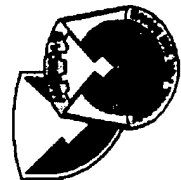
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# Heavy Tactical Wheeled Vehicles Production/ESP

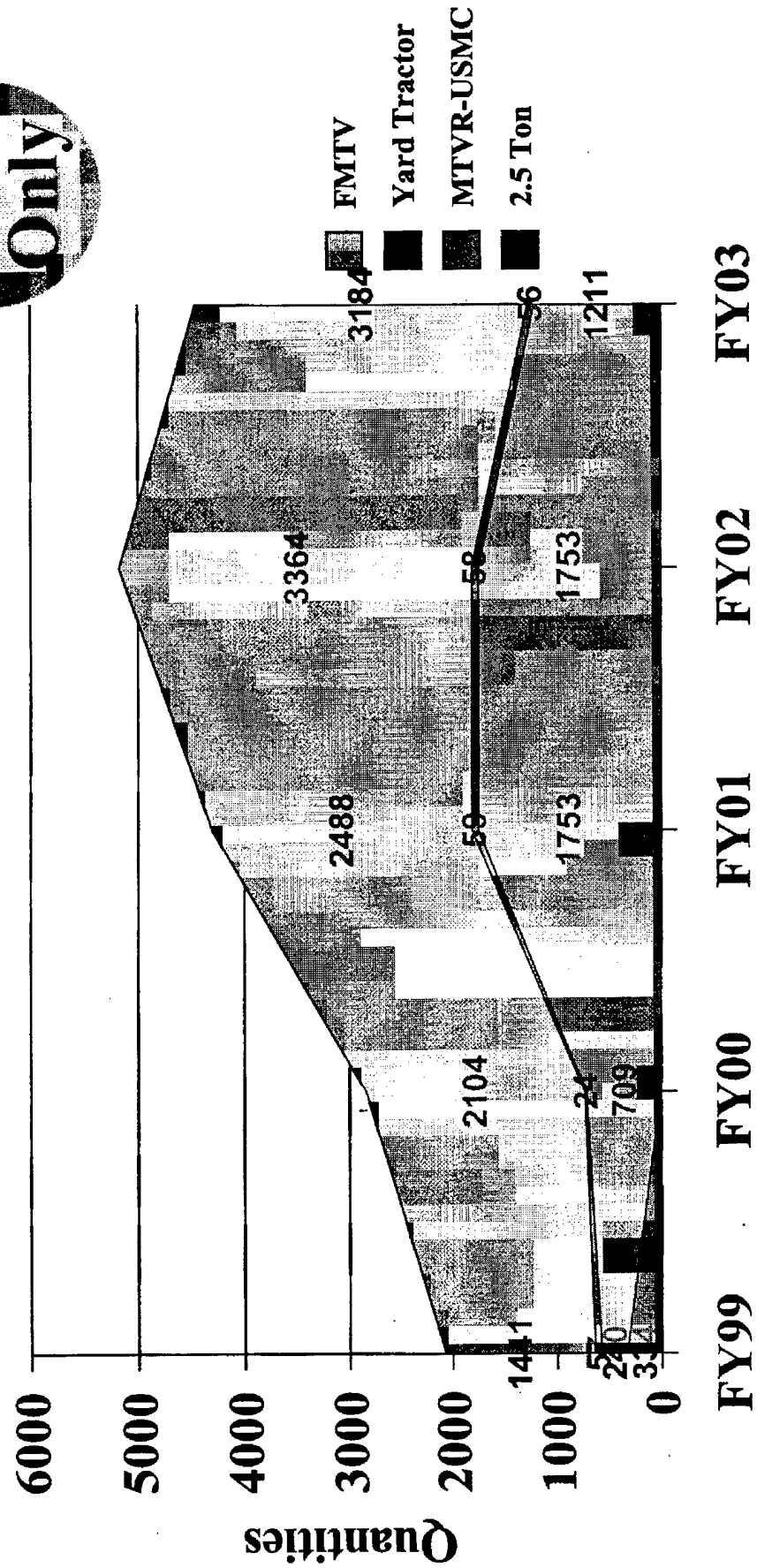
Info  
Only

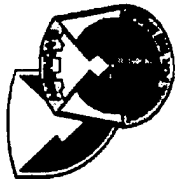




# Medium Tactical Wheeled Vehicles Production/ESP

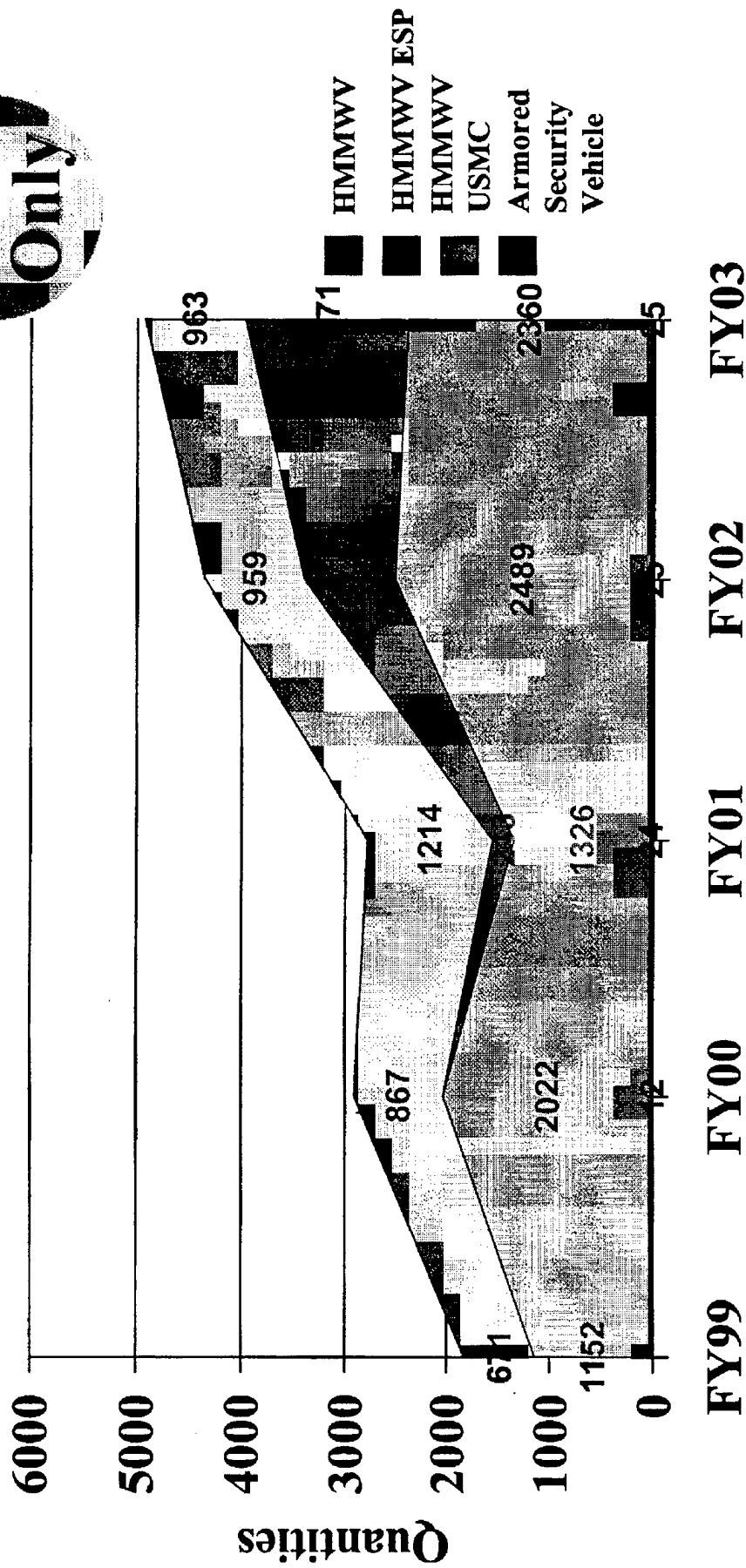
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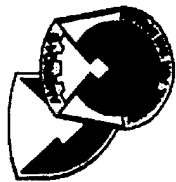




# Light Tactical Wheeled Vehicles Production/ESP

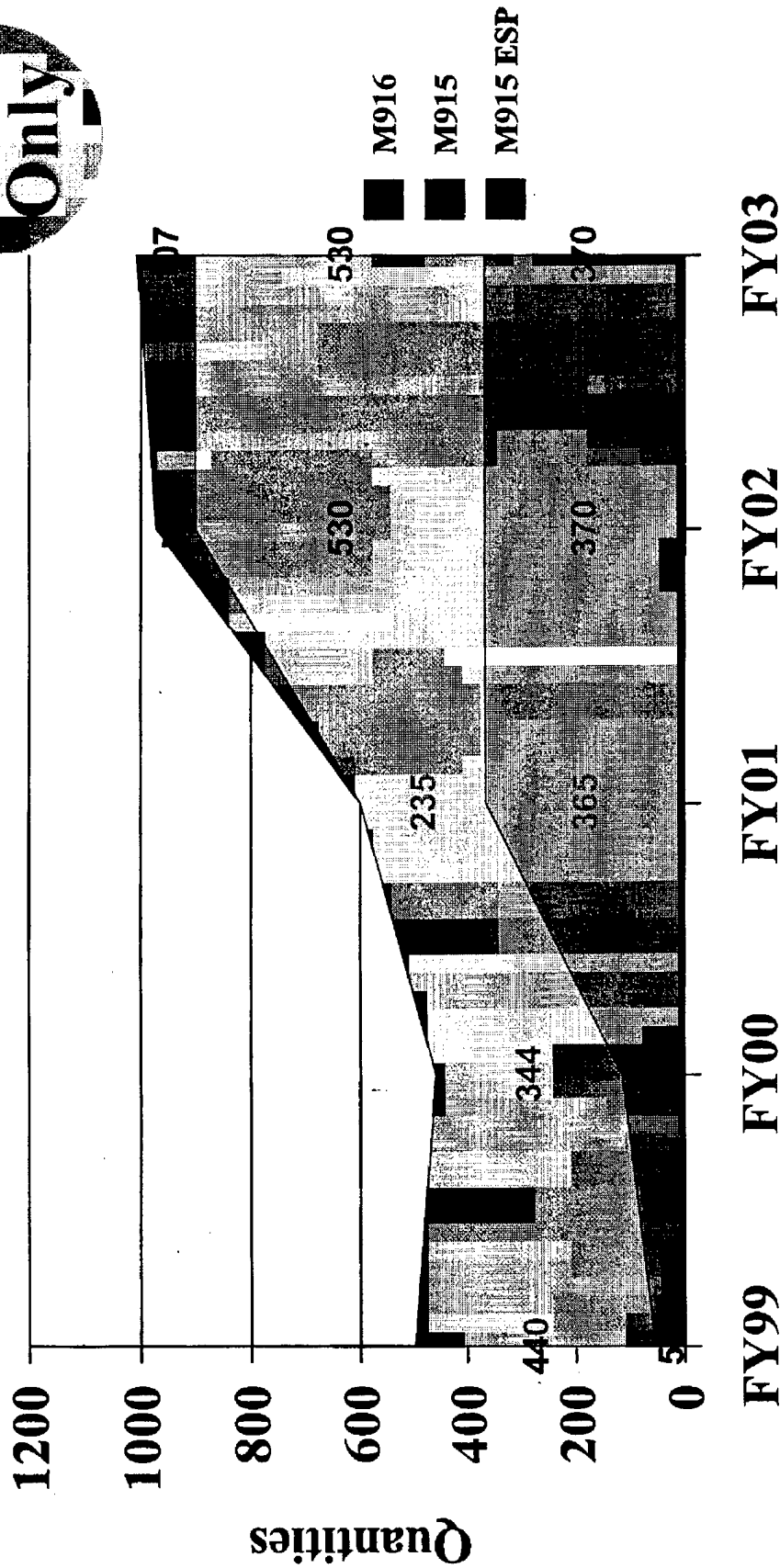
Info Only





# Line Haul Trucks Production/ESP

Info  
Only

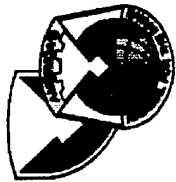


2/2/99

63/55

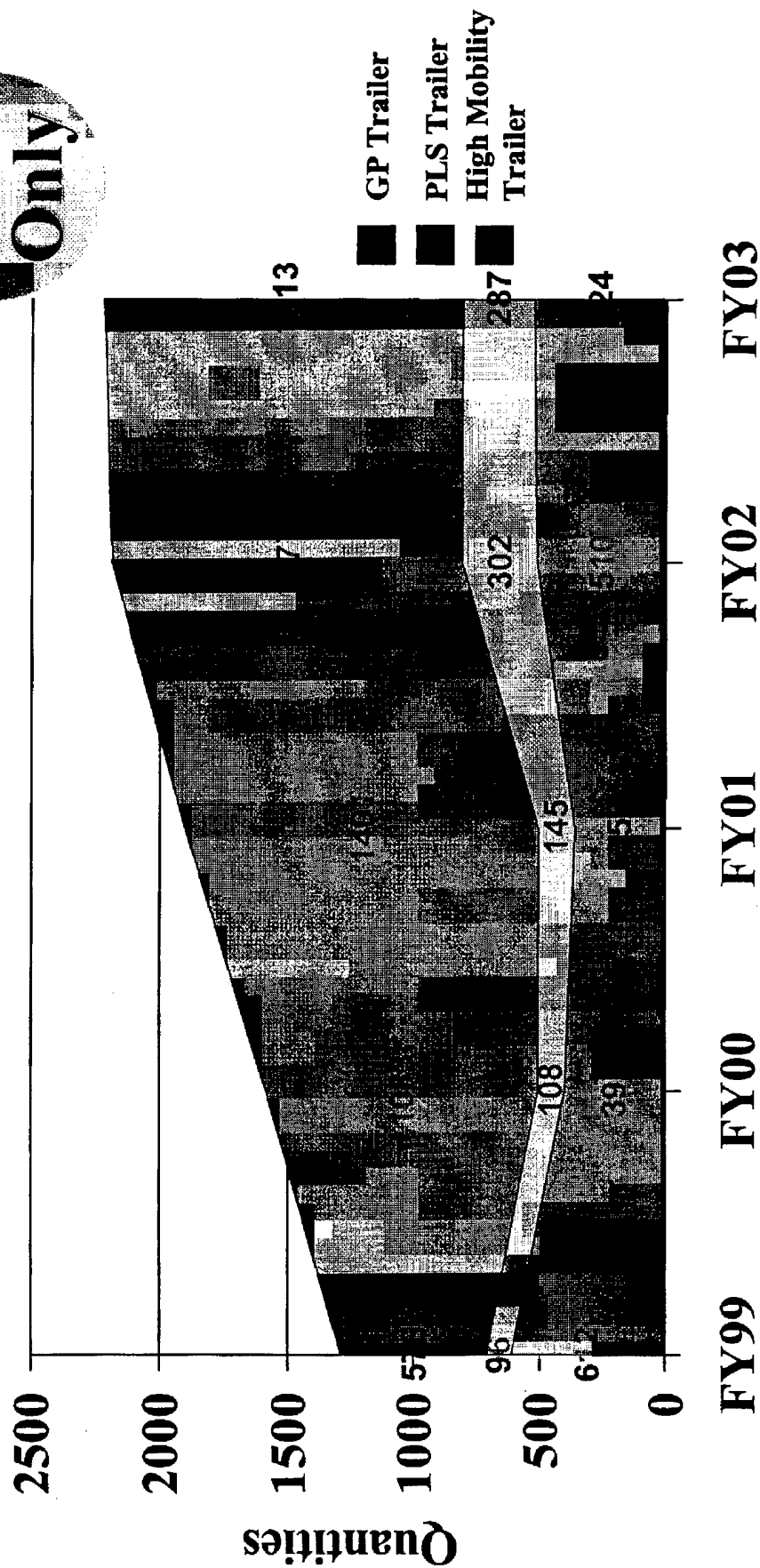
Committed to Excellence

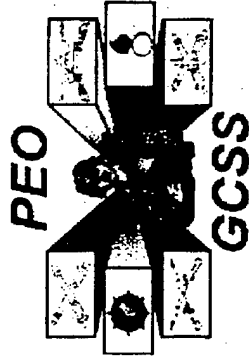
300



# Trailers Production/ESP

Info  
Only



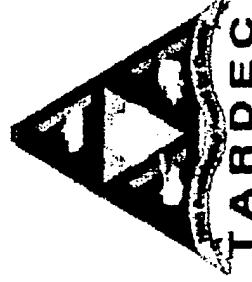


# ***TACOM / PEO-GCSS TWV PROGRAMS / ACTIVITY***

**NDIA TWV Conference**

**Monterey, California**

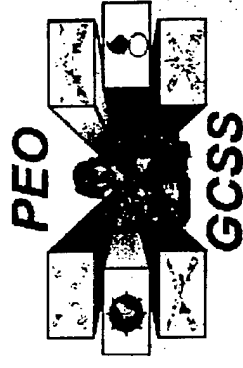
**2 February 1999**





# **TACOM / PEO-GCSS**

## ***Speakers***

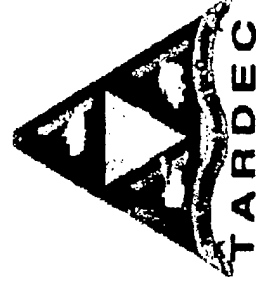


**Mr. Jerry Chapin - Director, TARDEC**

**Mr. Dan Mehney - Director, TACOM Acquisition Center**

**Mr. Al Puzzuoli - Deputy, PEO-GCSS**

**COL(P) John Urias - Deputy, Systems Acquisition  
(Deputy for Life Cycle Mgt.)**







# **TACOM / PEO-GCSS**

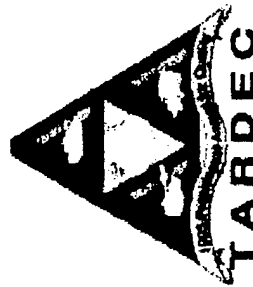
## ***Topics***

**Organizations and Responsibilities**

**Procurement and Production**

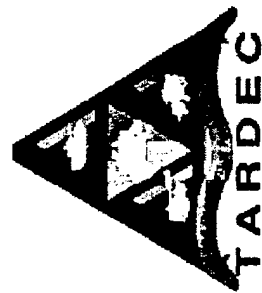
**Sustainment**

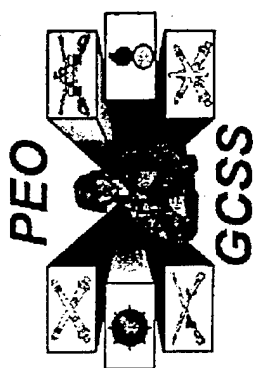
**Emerging Systems and Technologies**





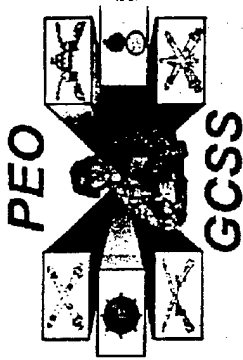
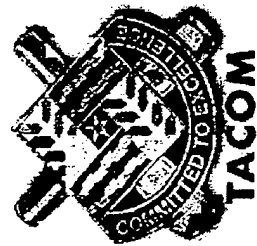
# *Organization & Responsibilities*



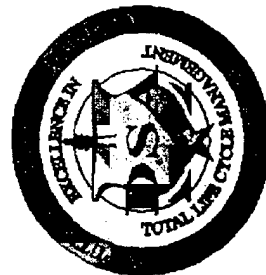


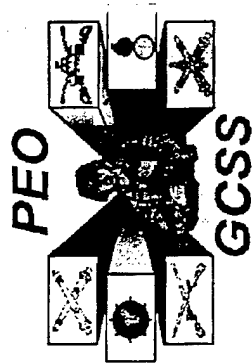
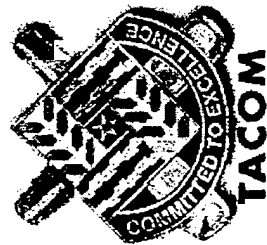
# *Procurement & Production*



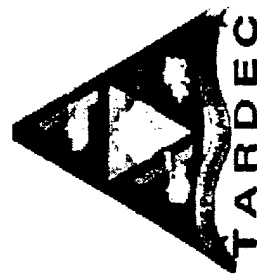


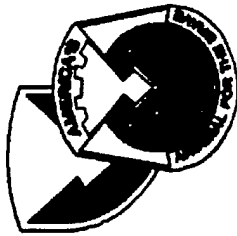
# *Sustainment*



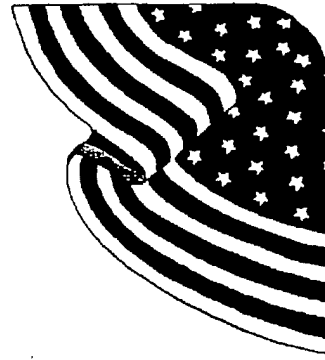


# *Emerging Systems & Technologies*





# 1999 Tactical Wheeled Vehicle Conference



1-2 February 1999

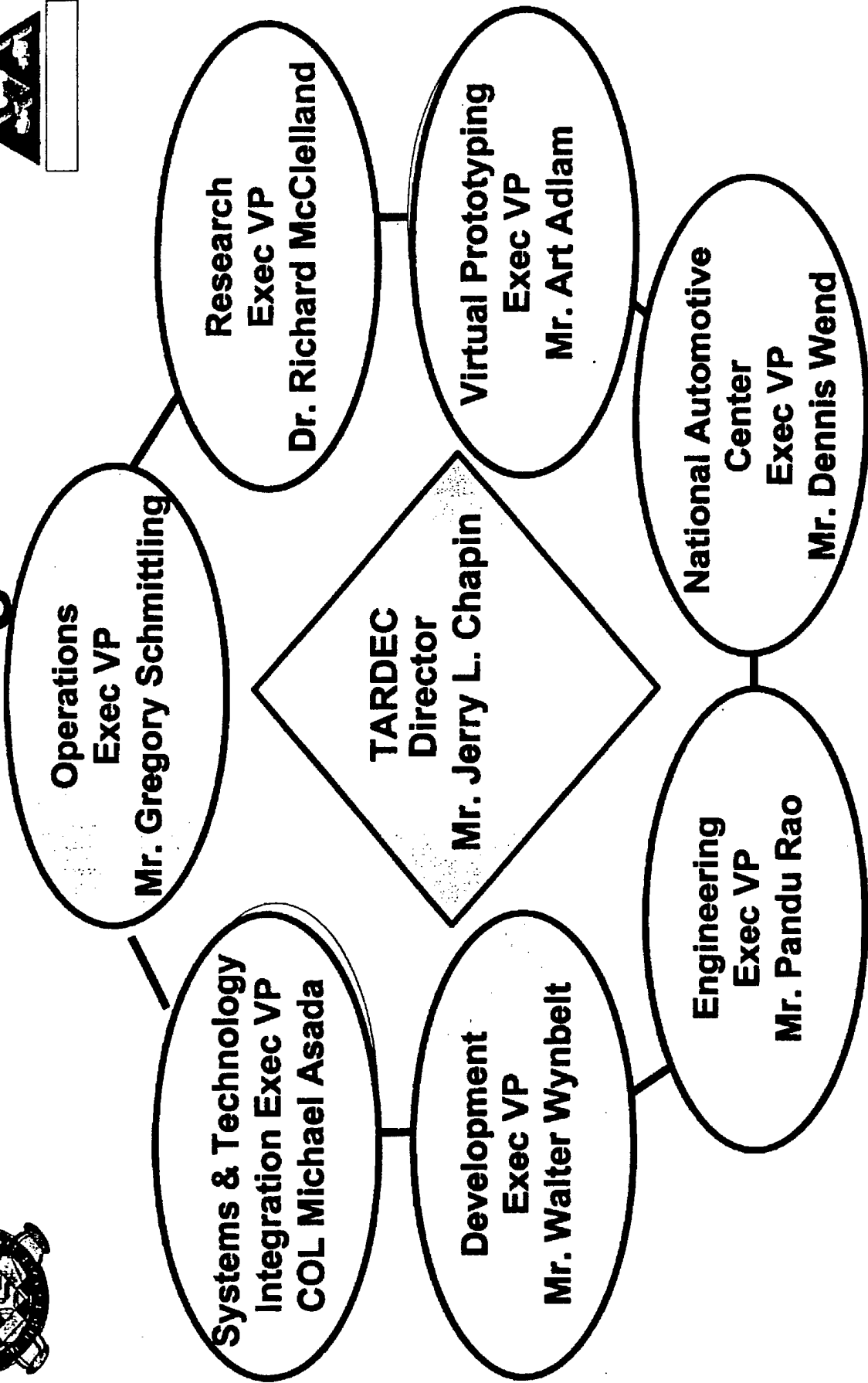
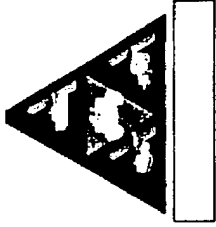
Jerry L. Chapin  
Director

Tank Automotive Research,  
Development and Engineering Center

Tank-automotive & Armaments COMmand



# TARDEC's Organization



*Committed to Excellence*

# TARDEC's Mission

- Ground Combat Systems
- Combat Support Systems
- Combat Service Support Systems



ENGINEERING

DEVELOPMENT

RESEARCH

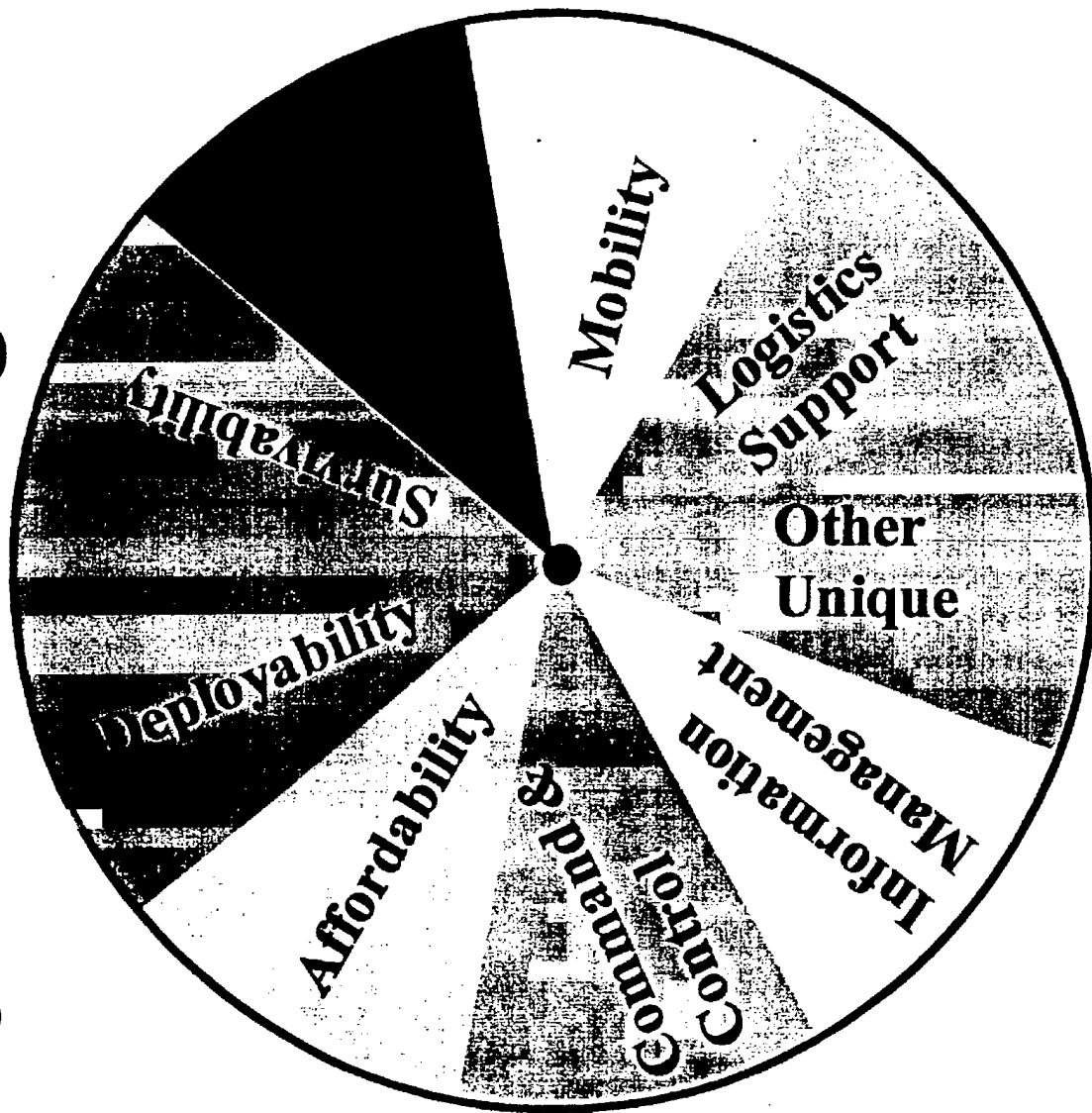
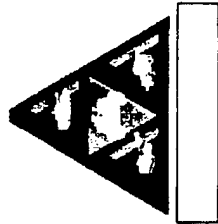
TECHNOLOGY  
DUAL-USE

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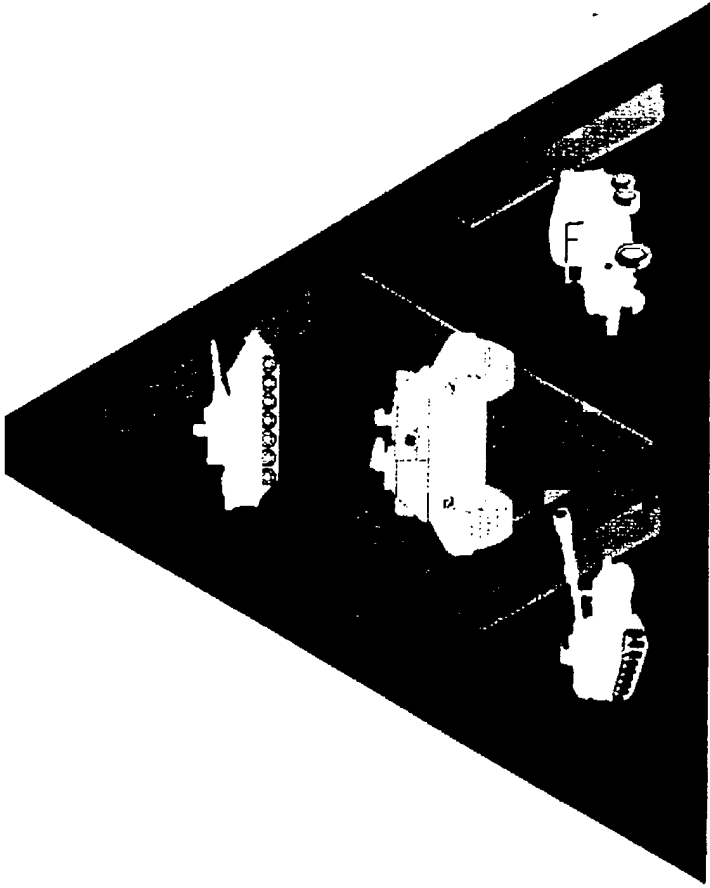
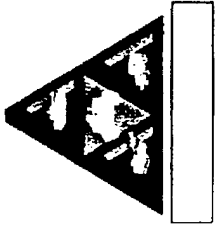
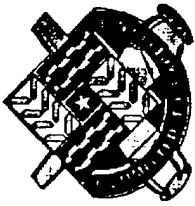




# System's Integration



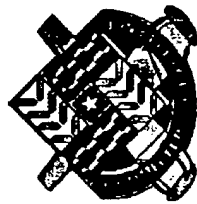
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# T A R D E C

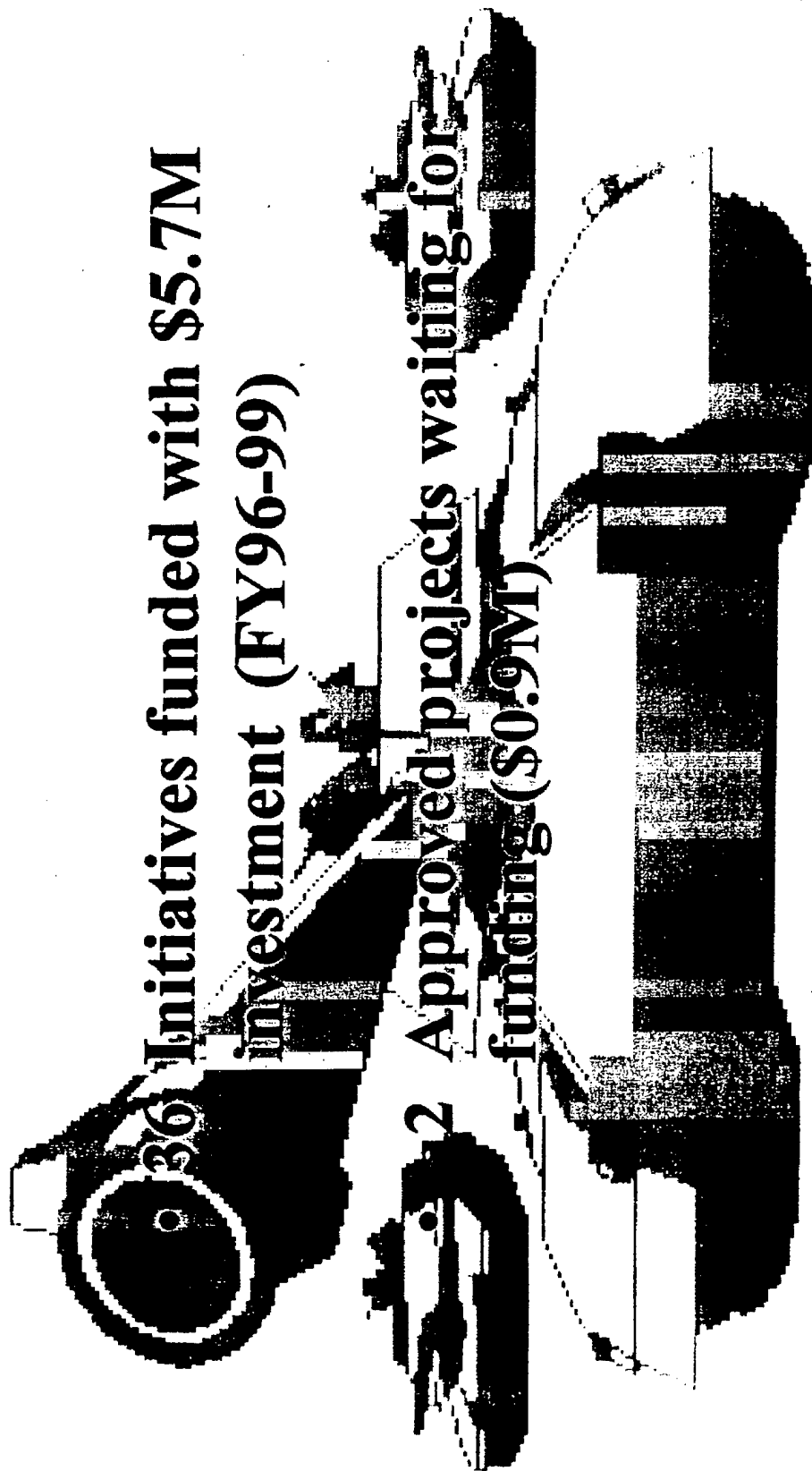
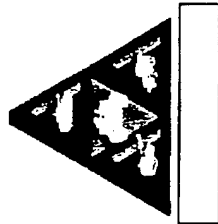
**Operation and Support Cost Reduction  
(OSCR)**

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# TACOM's SMA-OSCR

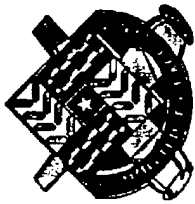
## Project/Funding Summary



36 Initiatives funded with \$5.7M investment (FY96-99)

22 Approved projects waiting for funding (\$0.9M)

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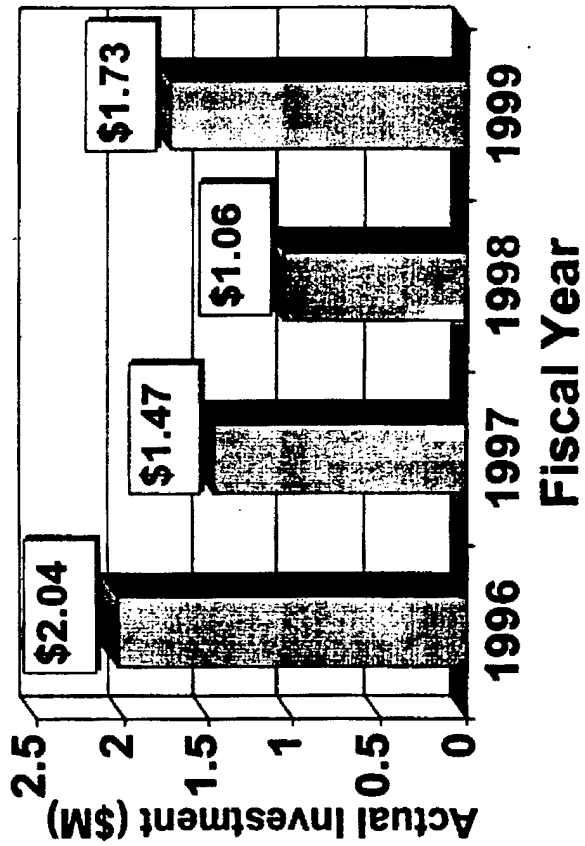
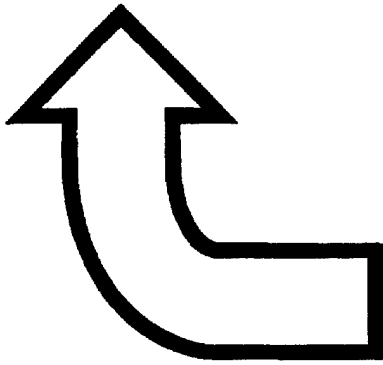
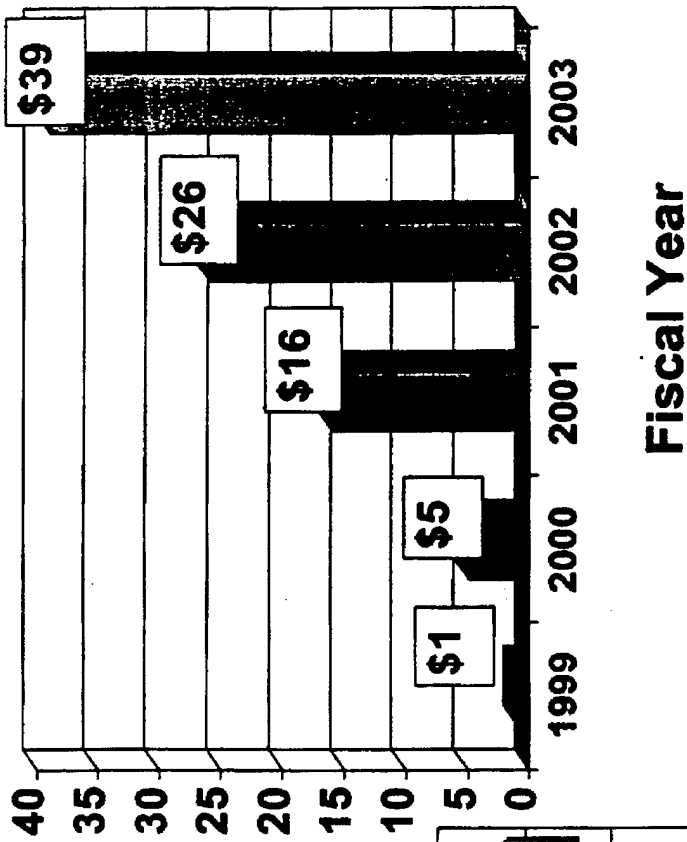
# TACOM OSCR PROGRAM

## INVESTMENT VS. SAVINGS

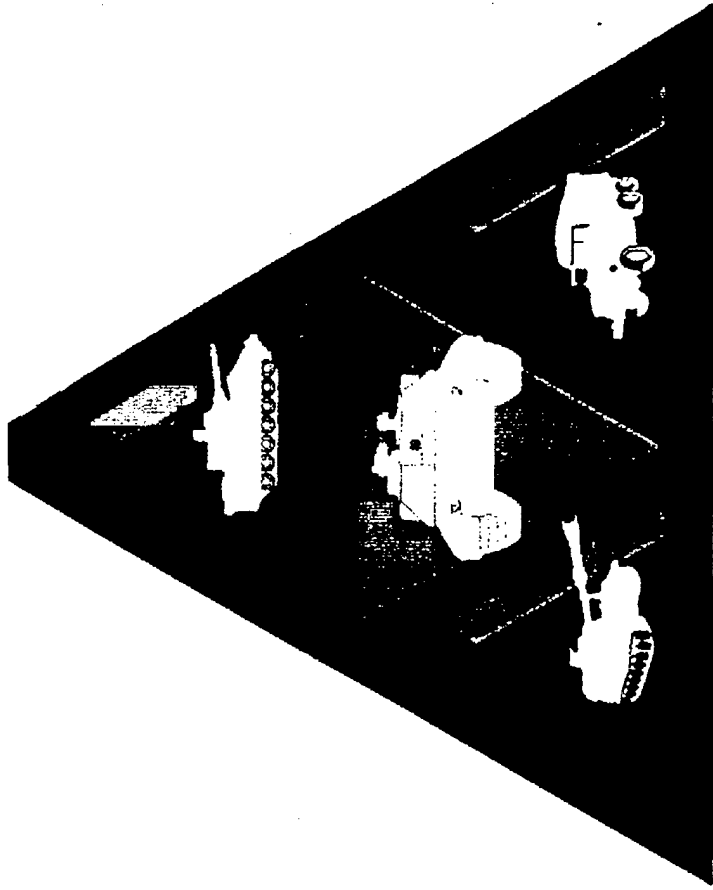
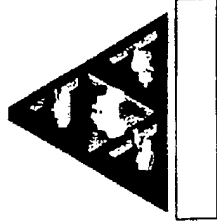


Goal Cumulative

Cumulative Field Savings (\$M)



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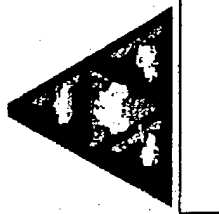
**TARDEC**

**Batteries**

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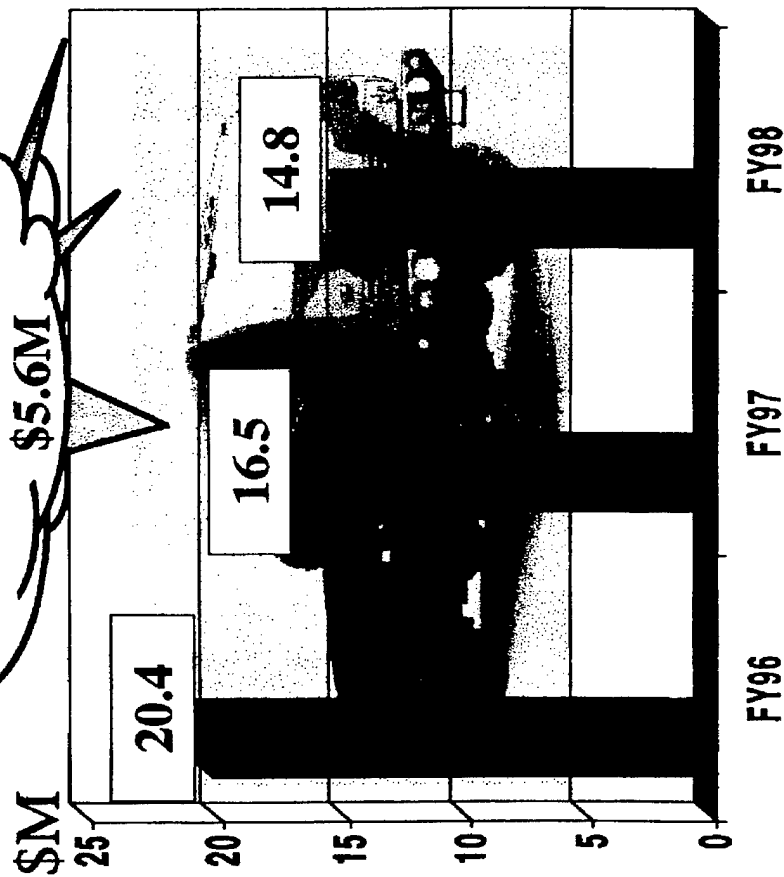


# Vehicle Battery Consumption

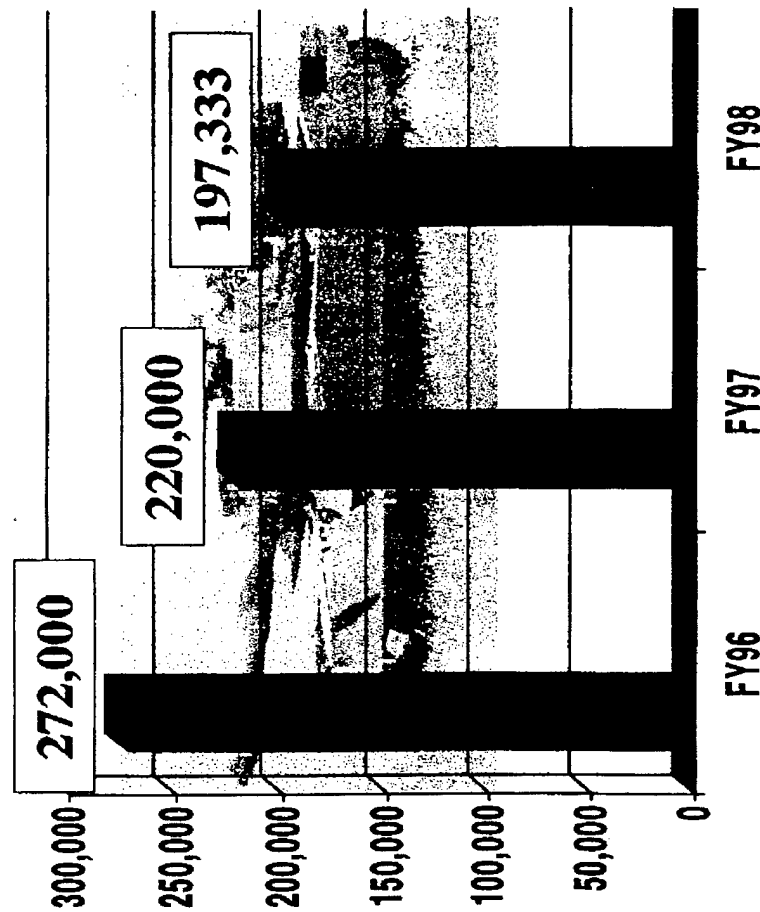
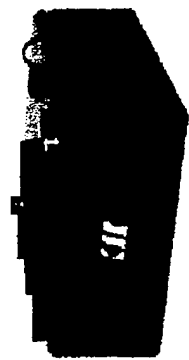


FY 96-98  
Cumulative Savings

\$5.6M



Units

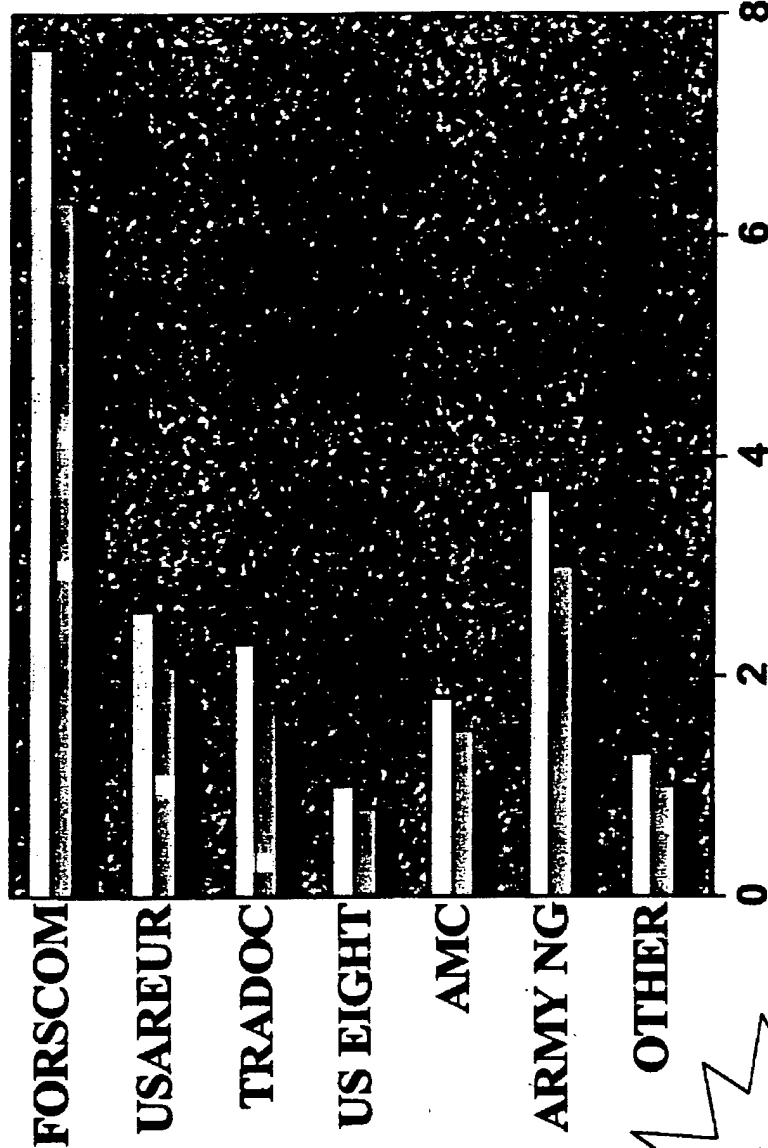
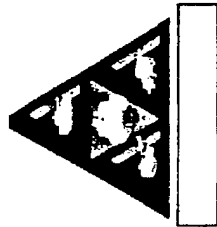


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# Vehicle Battery Consumption

(\$M)



FY 97  
\$16.5M

■ FY 98  
■ FY 97  
□ FY 96

FY 96  
\$20.4M

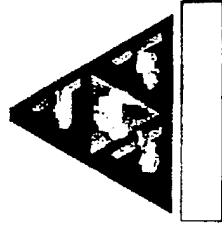
FY 98  
\$14.8M

Cumulative Cost Avoidance \$5.6M

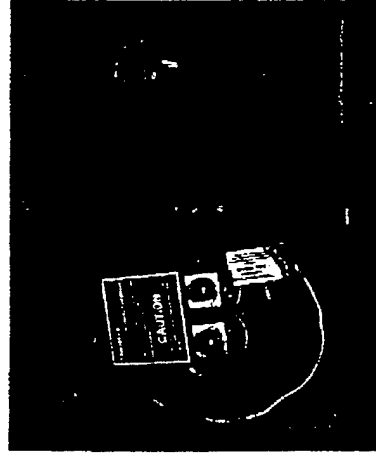
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# TACOM's Battery Management Program

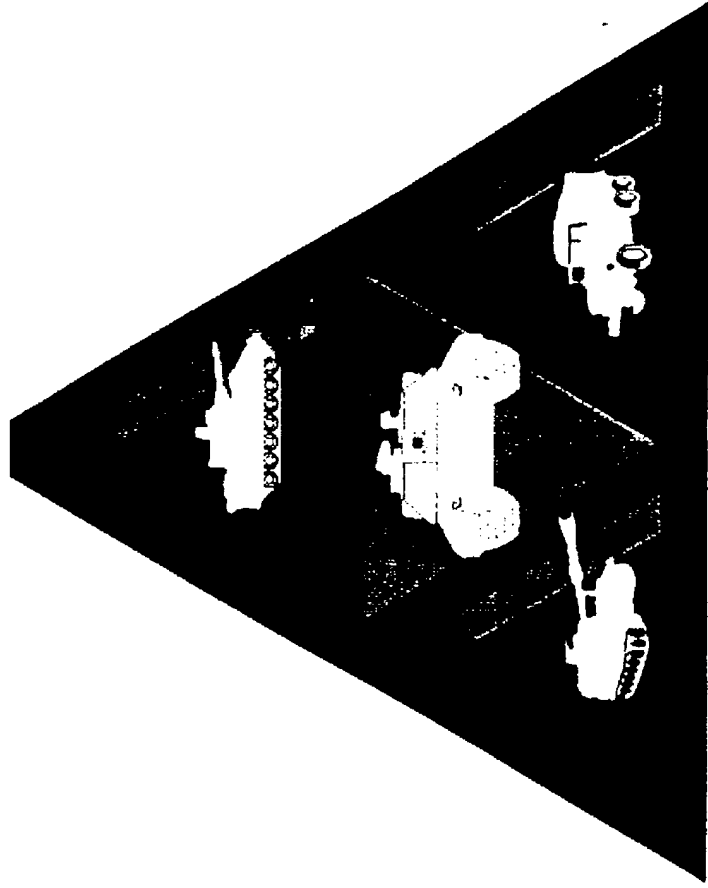
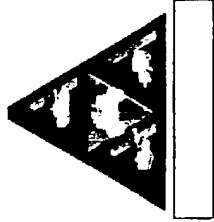


- Awareness
  - Maintenance
  - Equipment
  - Recovery
- Advanced Technology
  - Current
    - Solar Panels
    - Maintenance Free Batteries
    - Battery Maintainers/Chargers
  - Future
    - Smart Batteries
    - Ultra Capacitors
    - Advanced Battery Design
    - Fuel Cells



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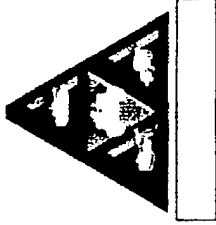
**T A R D E C**

# Waste Oil Reutilization

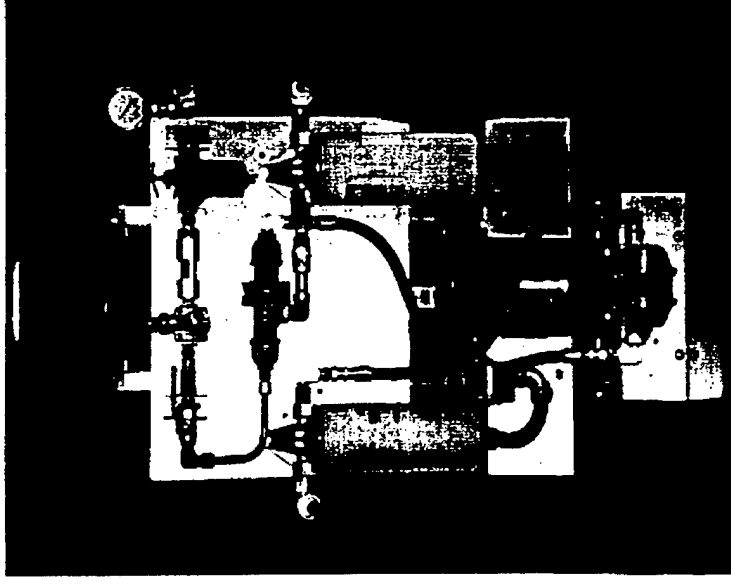
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# Waste Engine Oil Reutilization



- **Need:** Reduce military costs associated with used/waste oil.
- **Objective:** Develop environmentally friendly, low cost used engine oil disposal system that recovers used oil energy for vehicle use (with savings of one gallon of used oil recovered equals one gallon of JP-8 saved).
- **Concept:** Blend proportioned amounts of used vehicle crankcase oil and JP-8 fuel at regular oil change intervals, returning mixture to vehicle fuel tank.

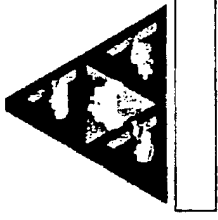


- **Technology:** Filtration/blending system
- **Key Points:**
  - Will meet EPA emission standards.
  - No degradation of vehicle components or performance.

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# Waste Engine Oil Reutilization



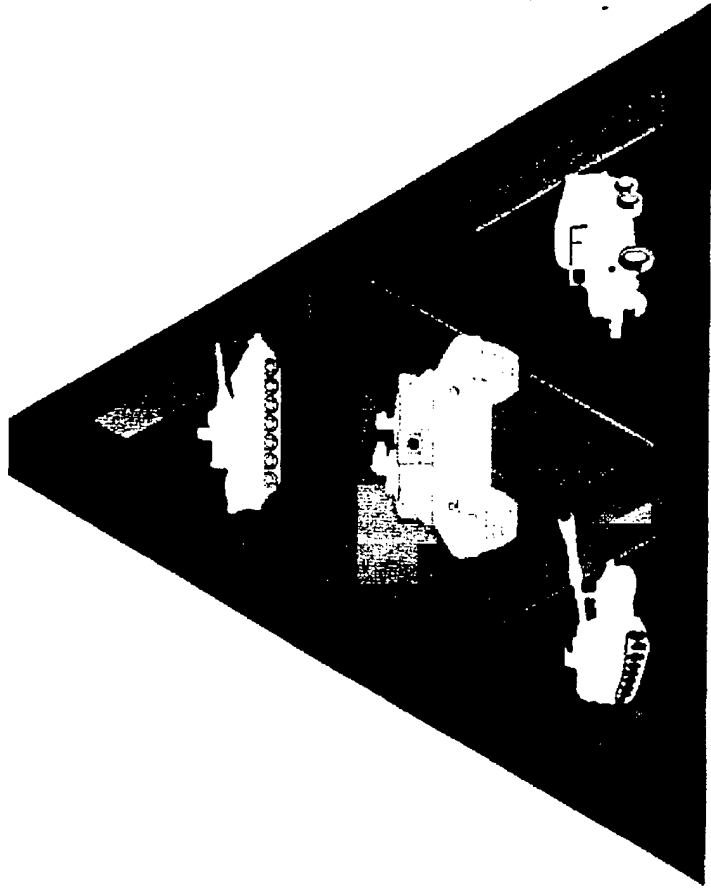
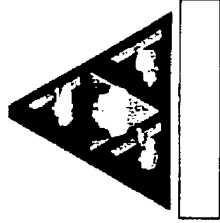
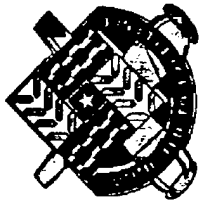
## • Test Results:

- Emissions test results at Southwest Research Institute fell below EPA ceilings on HMMWV and DD series 60 engines.
- Durability test results at TARDEC Fuels and Lubricants Research Facility showed little or no performance degradation in 6.2L and 6V53T engines.
- 6 month field demo at National Training Center, Ft Irwin, CA completed without any degradation of vehicle performance

## • Current Status:

- Two (2) Blenders are being provided to each of the following: National Training Center (NTC) - Fort Irwin; CA, Fort Polk, LA and; Fort Lewis, WA.
- Blenders are to be provided to the Soldiers/Users for evaluation and feedback.

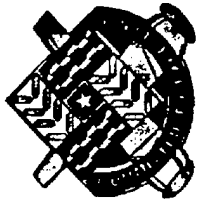
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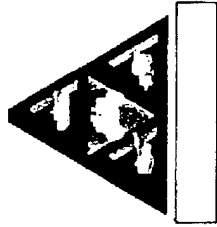
**TARDEC**

**21st Century Truck**

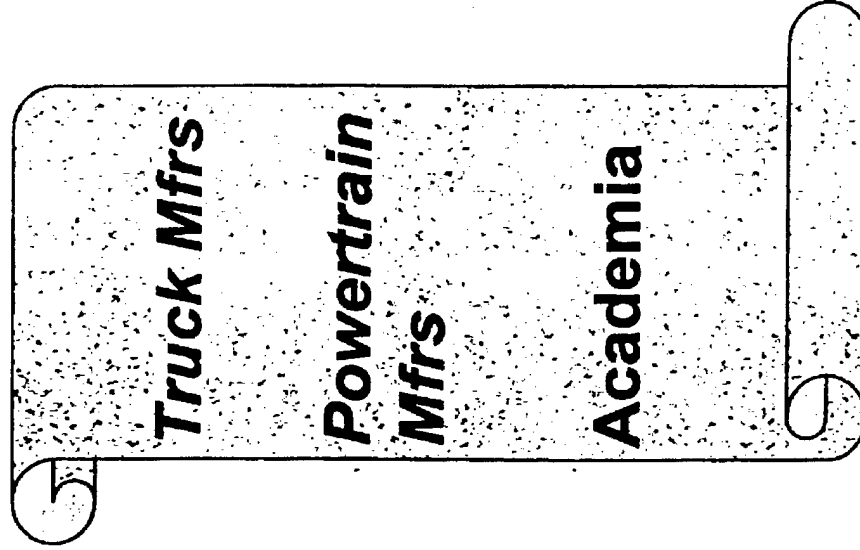
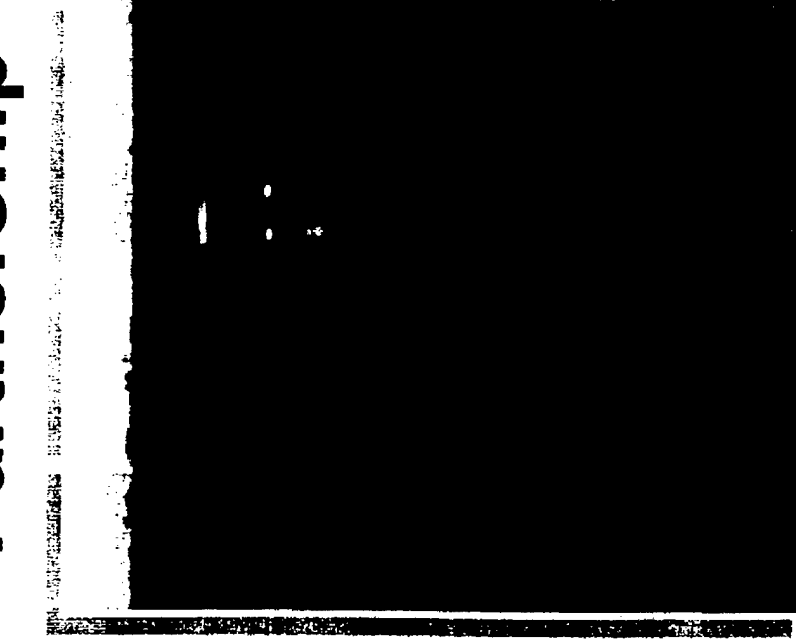
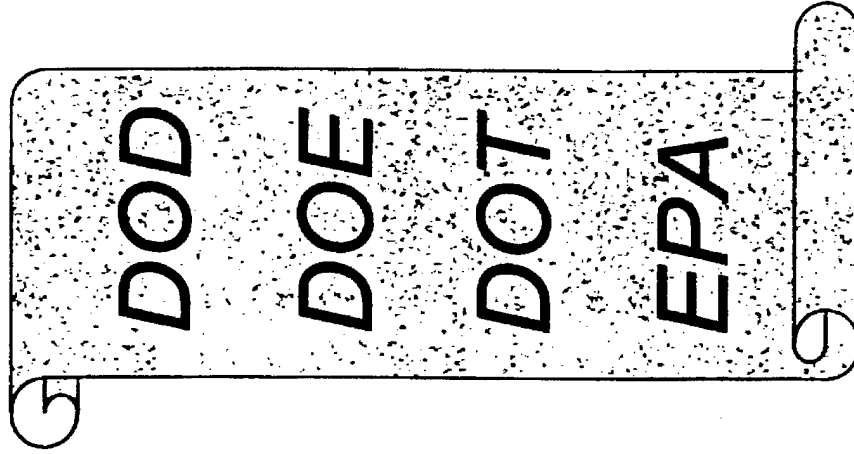
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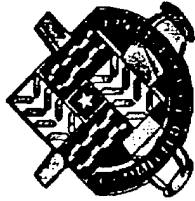
# 21st Century Truck Initiative Government/Industry



## Partnership

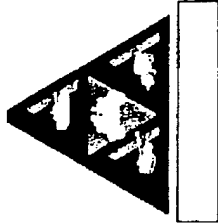


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## 21st Century Truck Initiative

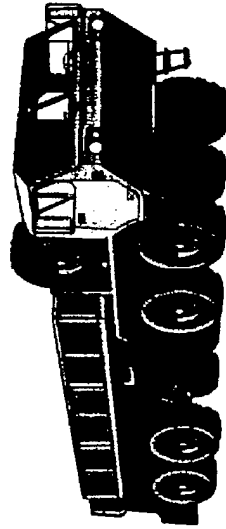
# Trucks are Vital to the Army



## and to the Country

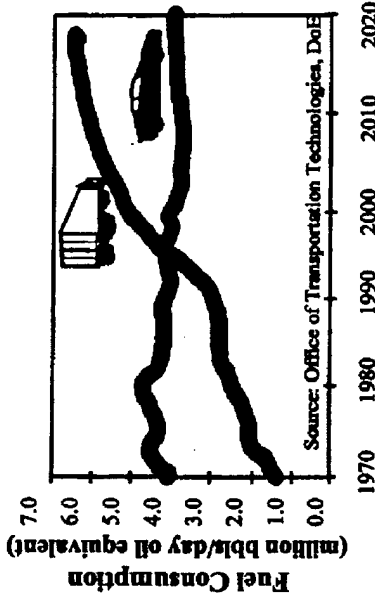
**Trucks Provide the Logistical Backbone to the Army**

**Trucks Account for Over 75% of the Nation's Freight Business**



**Fuel constitutes 70% of bulk tonnage needed to sustain a military force on the battlefield. This equates to about 600,000 gallons per day.**

**-Fuel Efficient AAN Task Force**



**Light, Medium, and Heavy Trucks burn more fuel than cars**

## Army After Next Goal:

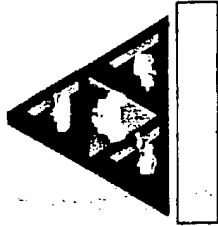
**“...75% Reduction in Fuel Requirements for a Deployed Force...”**

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# 21st Century Truck Initiative

## Goals

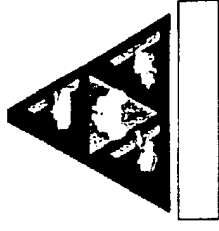


- **Economic “leap-ahead” vehicle**
  - Increase fuel efficiency
  - Reduce cost of operation
  - Increase power generation performance
- **Environmentally friendly vehicle**
  - Reduce emissions
  - Reduce damage to infrastructure
- **“Smart” truck for safety and security**
  - Integrate new Vetronics and data bus technology
  - Develop user friendly information and navigation to increase driver awareness/alertness

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## 21st Century Truck Initiative



### ***NAC Programs***

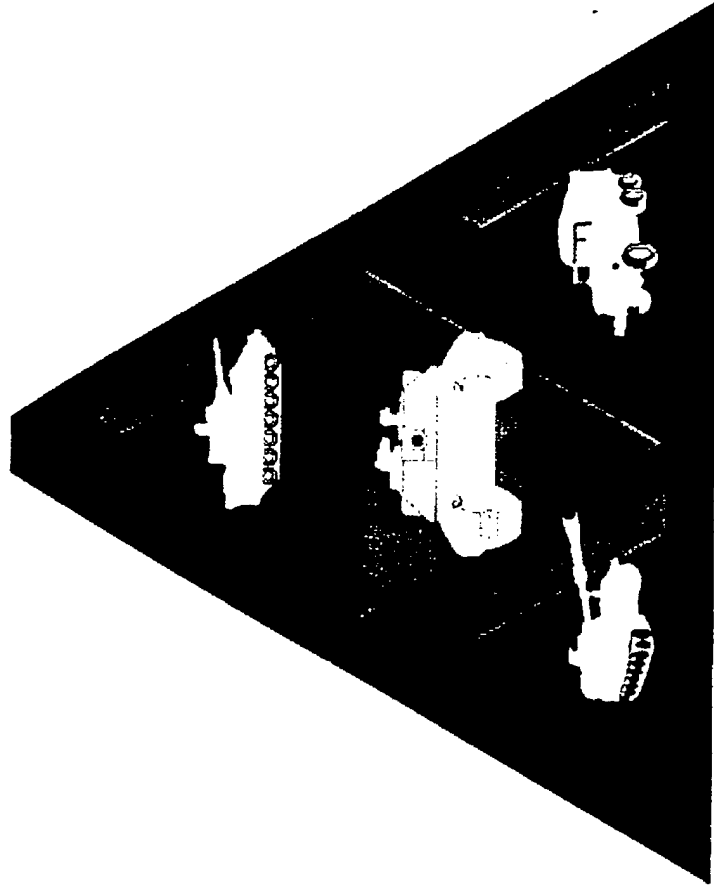
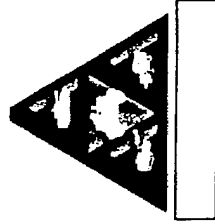
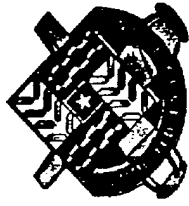
- **Optimized Motor and Motor Controller (*ISE Research*)**
- **Soft - Switching Inverter (*General Motors*)**
- **Parallel Hybrid Electric Class 8 Linehaul Tractor (*Radian*)**
- **Series Hybrid Electric FMTV (*Lockheed Martin Control Systems*)**
- **Diesel Reformer Fuel Cell Hybrid (*Sunline Services Group*)**

### ***Other Initiatives***

- **Hybrid Electric HMMWV (*PEI*)**
- **Hybrid Electric M113 (*UDLP*)**
- **Hybrid Electric BFVS (*UDLP*)**

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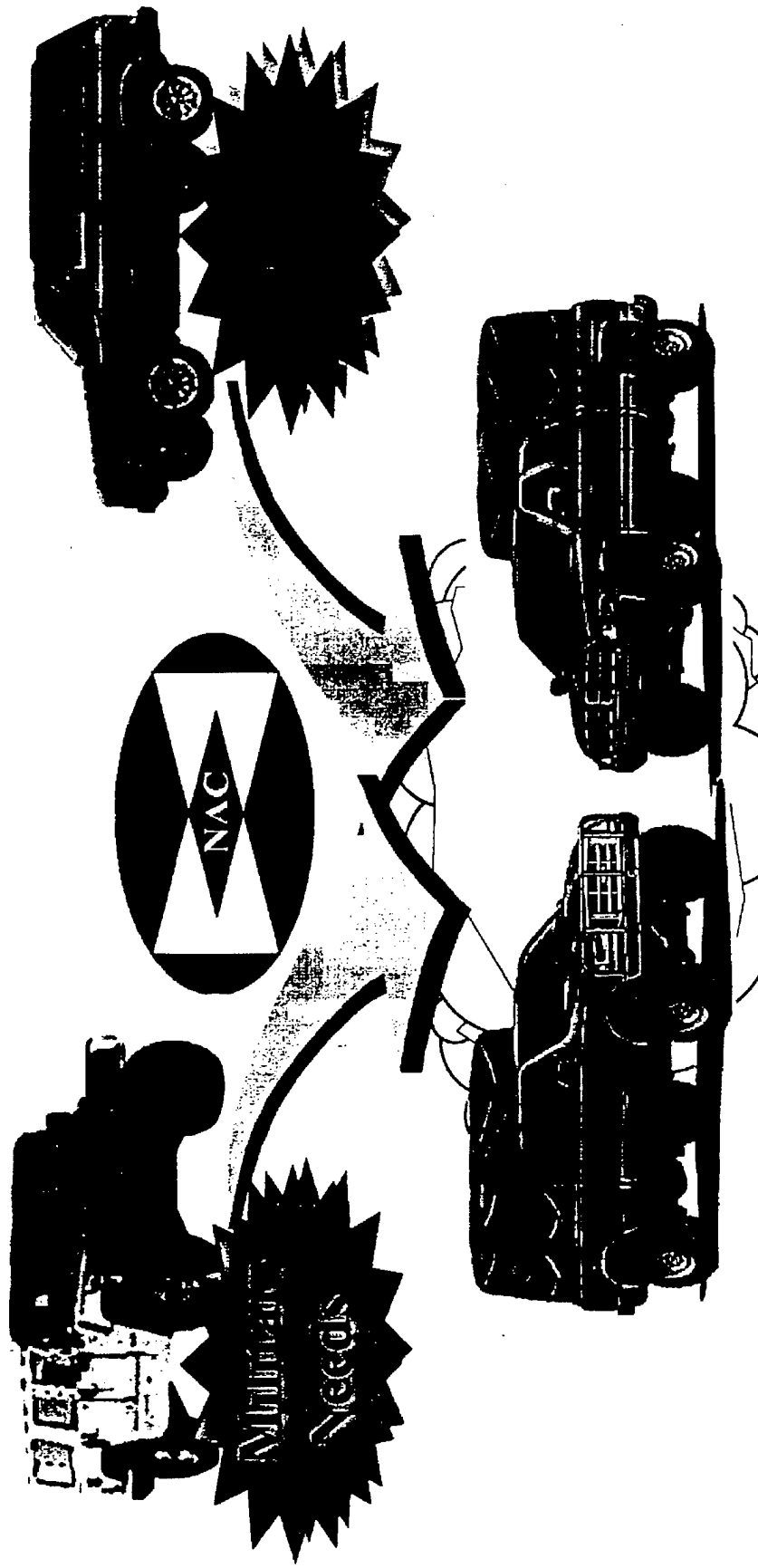
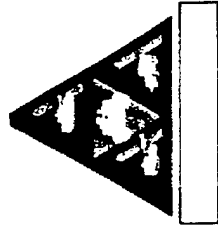
# T A R D E C

**Commercially Based Tactical Truck  
(COMBATT)**

*Committed to Excellence*



# *Commercially Based Tactical Truck* **(COMBATT)**

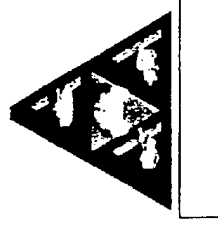


**HMMWV Requirements for the 21st Century**

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# Two Part Program



## 1 • Modify Ford F350 and Dodge Ram Trucks

- WHY - Enhance performance in military environment
  - » Increase off road mobility especially in soft soil conditions
  - » Increase to 4,550 lb payload
  - » Militarize (black out lights, camouflage paint, personal weapon mounts, tie downs/lifting eyes, antennae mounts)
  - » Take advantage of current electronics and enhance as needed

## 2 • Modify HMMWV with New Technology

- WHY - Insertion into HMMWV Remanufacture Program
  - » Enhance safety
  - » Increase reliability
  - » Reduce Operational and Support (O&S) costs
  - » Insert new electronics

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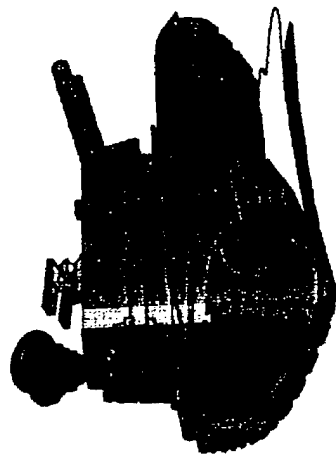
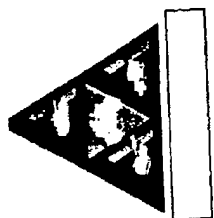


# COMBATT Highlights

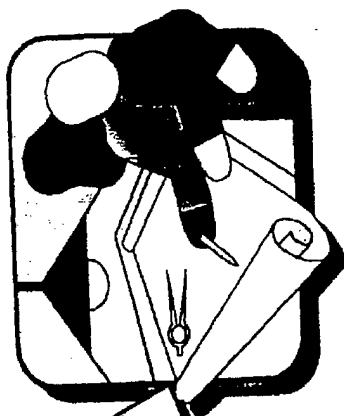
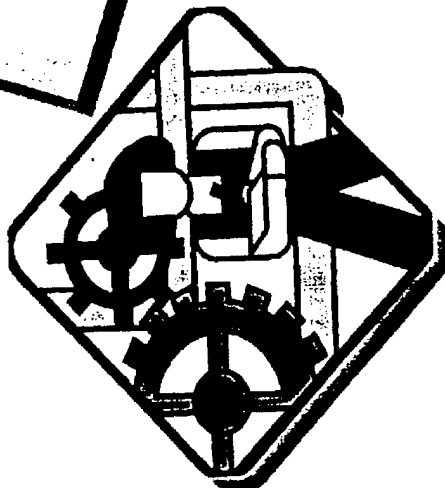


- Four phase program over 2 years
  - Requirements planning and analysis
  - Design to requirements
  - Build to design
  - Demonstration and evaluation
- Demonstration
  - Appropriately modified commercially based trucks can approach performance of HMMWV cargo troop carrier variant
- Approach:
  - Listen to the USER
  - Share engineering decisions with PM-LTV and original equipment manufacturers
  - Work with Army Testing Community (Actual and Simulated)
  - Waterways Experiment Station (Mobility)

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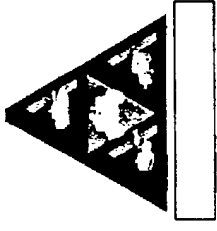
**PARTNERSHIP WITH INDUSTRY**



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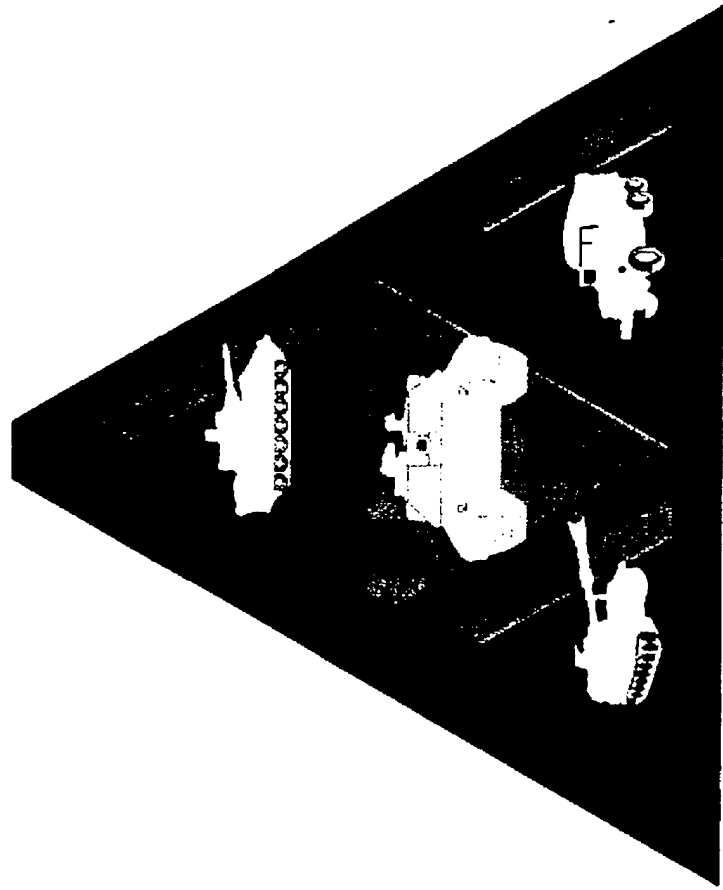
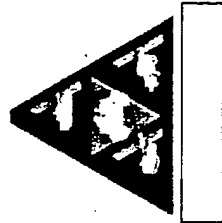
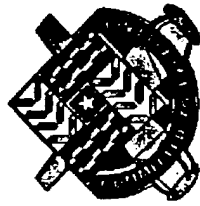


## Other Customers



- **MTL Services:**
  - Has identified potential customers from:
    - US Departments of Justice, Treasury, Interior, Transportation, State and Local Law Enforcement
    - Germany and Great Britain
- **Could influence production numbers/costs**
- **Informal working group of Federal agencies**
  - TACOM will chair
  - May develop shared performance goals
  - May share costs

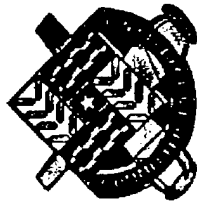
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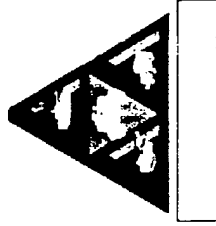
**T A R D E C**

# Hybrid Electric Vehicles

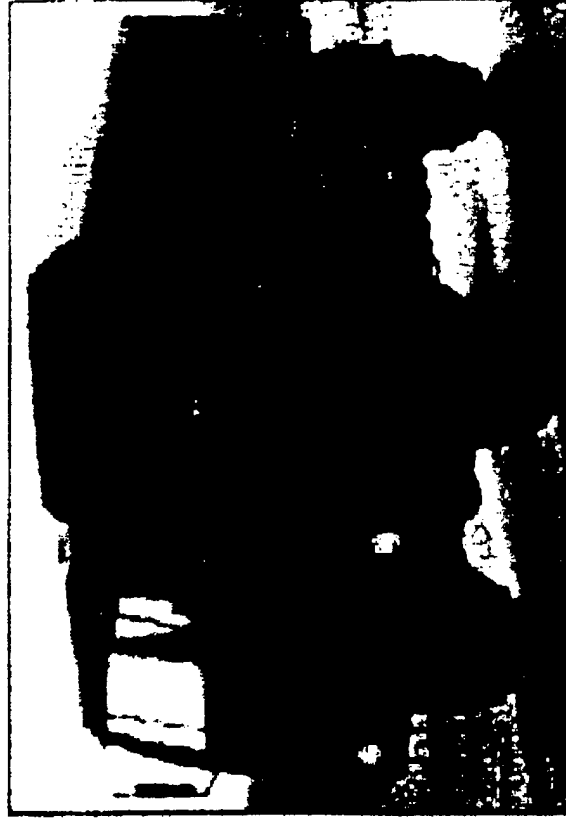
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# Series Hybrid FMTV



- Need: FY99 AAN Technology short list includes hybrid power systems, fuel efficiency. AAN goal is to reduce fuel requirements 75% by 2025



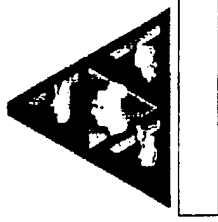
- Objective: Demonstrate greatly improved FMTV fuel economy and performance using commercial hybrid electric drive system for medium vehicles.

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# Series Hybrid FMTV



• Description: Lockheed-Martin (LMCS) and Stewart and Stevenson will apply LMCS' commercial hybrid drive system for medium trucks (HybriDrive) to an M1078 Light Tactical Vehicle

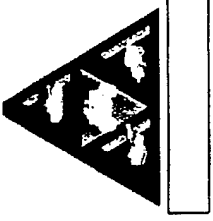
• Benefits

- Faster Acceleration
- Improved Traction
- Can supply mobile power
- Fuel efficiency improved 50%
- Reduced brake, axle and differential wear

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# Parallel Hybrid Line Haul Truck



- Need: FY99 AAN Technology short list includes hybrid power systems, fuel efficiency. AAN goal is to reduce fuel requirements 75% by 2025

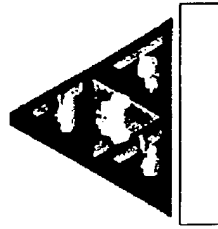


- Objective: Demonstrate greatly improved M915 fuel economy and performance using parallel hybrid electric drive system. Leverage off commercial Mack Truck application.

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# Parallel Hybrid Line Haul Truck



• Description: RADIANT, Inc., with Lockheed Martin (LMCS) and Mack Truck, will develop a parallel hybrid electric drive train for a Mack CL series line haul truck chassis. The CL chassis is similar to the M915 Truck Tractor.

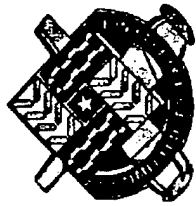
- Benefits

- Faster Acceleration
- Can supply mobile power
- Fuel efficiency improved 50%
- Reduced brake, axle and differential wear
- Gradeability improved to meet M915 requirements in all climates

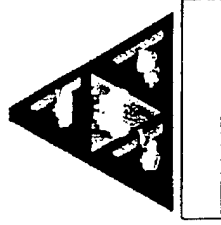
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# Crew Protection Kits for Operation Joint Endeavor



## Challenge:

Provide an immediate response to the requirement to protect Tactical Wheeled Vehicles against over 6 million mines & small arms fire.

## Requirement:

Protect the vehicle crews from:

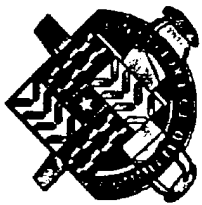
1. Anti-Tank Blast Mines (12 lb. TNT)
2. Small Arms (infantry rifle) fire
3. Anti-personnel fragmenting mines

## Response:

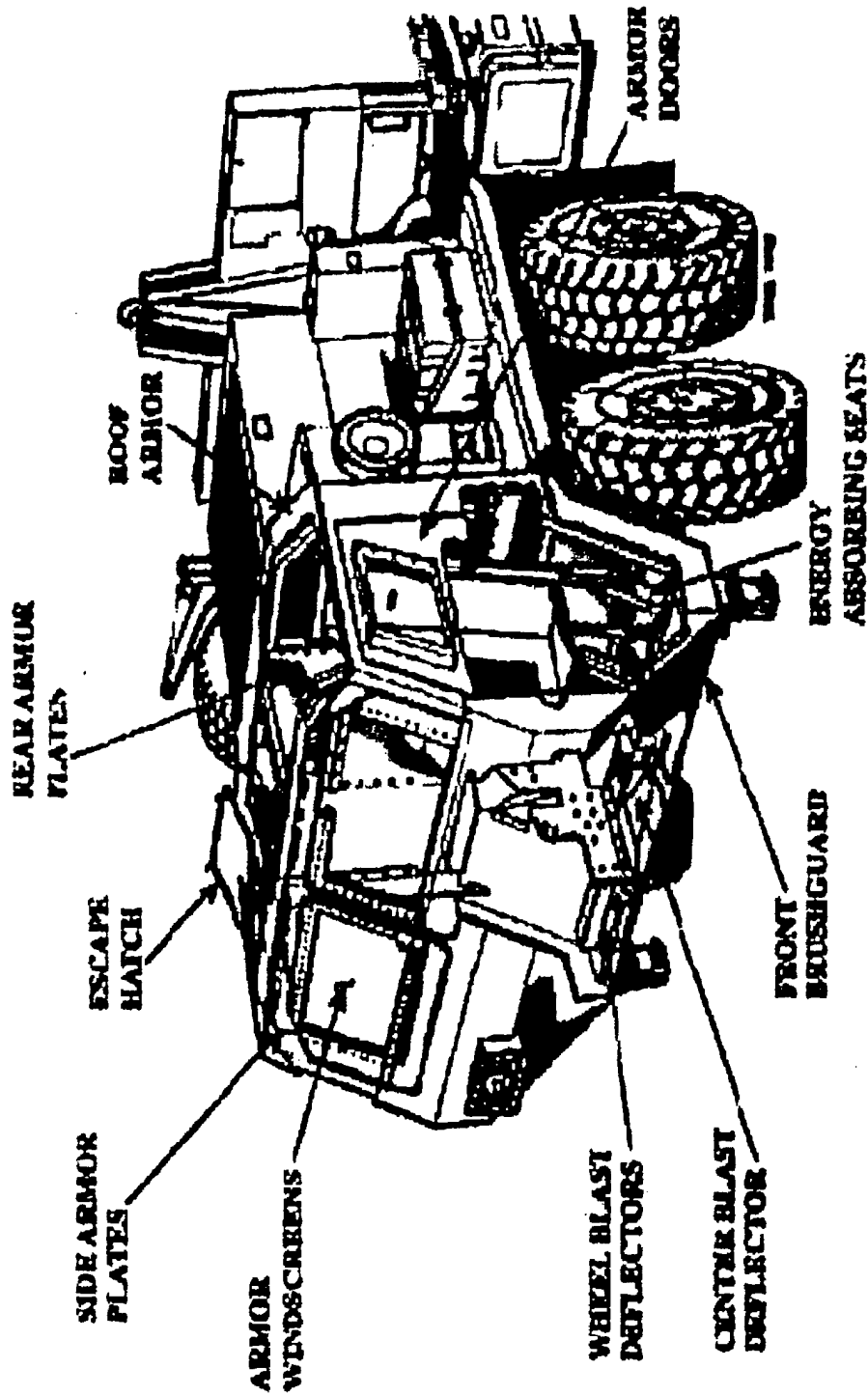
	<u>5 Ton</u>	<u>PLS</u>	<u>HEMTT*</u>
# of kits Produced	165	54	186
Kit Weight Added:	1,860 lbs	2,006 lbs	2,053 lbs
Per-unit Production Costs:	\$34,500	\$45,405	\$36,000
Per-unit Installation Time:	65 manhours	35 manhours	40 manhours

\*Industry design and fabrication.

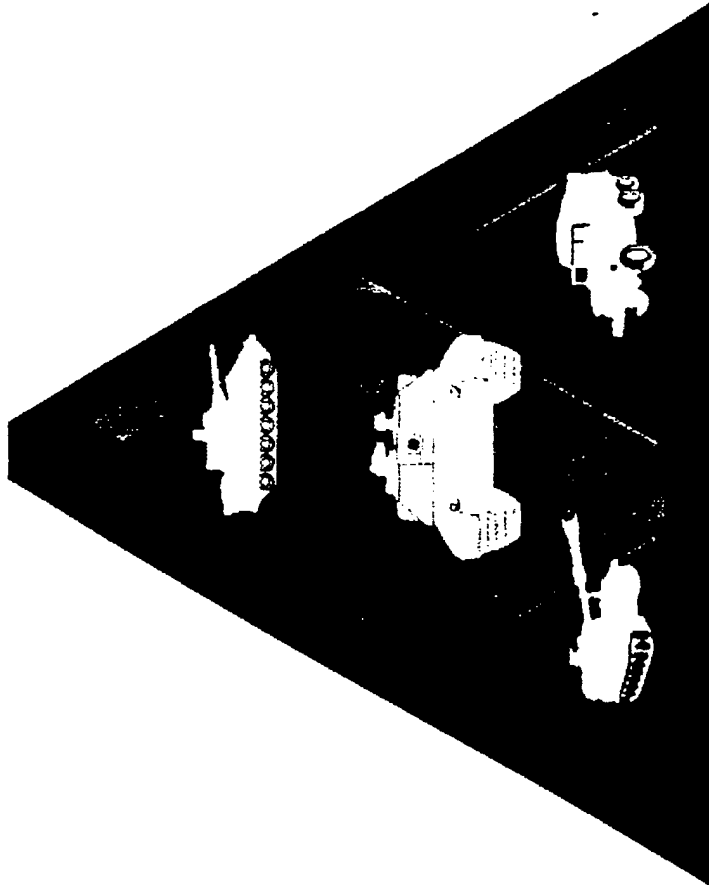
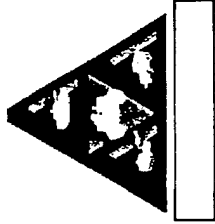
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# PLS CREW PROTECTION KIT



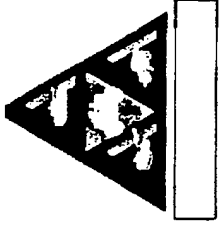
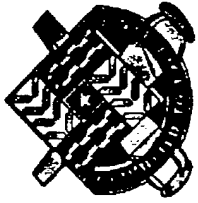
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**TARDEC**

**Corrosion**

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## Current Status of the Fleet - an overview

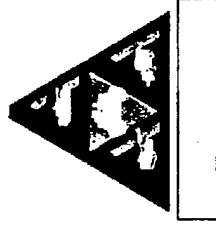
- ◆ 800 Thousand Ground Vehicles in Army, NG and AR Units
- ◆ Positioned in a Variety of Locations and Various Environments, Long Term Storage (WRM), Active etc.
- ◆ Investment in 5 Ton Truck is ~ \$80 to 120 K (new)
- ◆ Corrosion Maintenance Costs \$800 to 1200/year/5T vehicle
- ◆ Cost to Replace One 5 Ton Cab is ~ \$17 K
- ◆ Total Cost to the Army is ~ \$2 B / Year !!!! (Battelle Study)

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## Accomplishments To Date

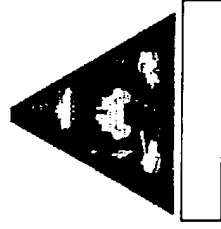


- ◆ Army's First ACT on an Entire Vehicle
  - HMMWV - at TRC in Ohio (80's)
  - FMTV - on going - at TRC and APG
- ◆ Cape Canaveral Marine Exposure Facility
  - JEEP Bodies and Door of 5 Ton Truck
    - ▶ Coatings and Repair Procedures
    - ▶ Construction, Design and Adv. Mfg. Techniques
- ◆ Field Evaluation of COTS:
  - Zinc Rich Primers and Thermal Spray
  - Corrosion Inhibiting Coatings: CarWell, Z-Tech etc.
  - Chip and Abrasion Resistant Coatings

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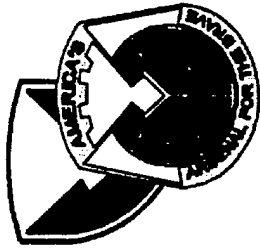


## Accomplishments To Date - continued



- ◆ Composites
  - Driveshafts
  - HMMWV Hood
- ◆ Non - Ferrous Metals
  - Hatch Covers for Bradley and M-1 parts
  - Base Plate for 80 mm Mortar
  - FreightLiner M-915 Tractor has an All Aluminum Model
  - 5 Ton Truck Stainless Steel Cab

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**U.S. Army Tank-automotive &  
Armaments Command**



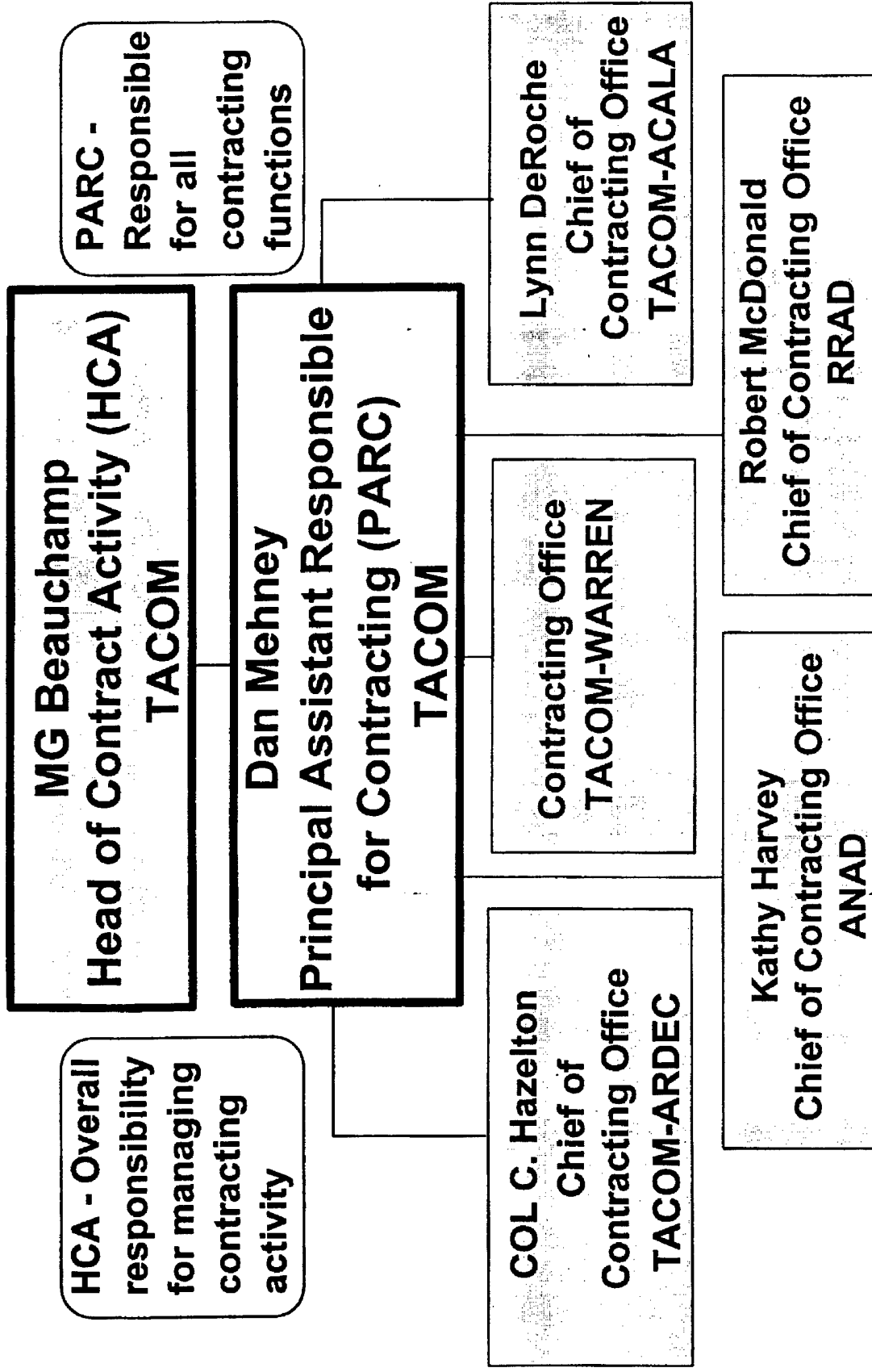
# **Acquisition Center Overview**

**NDIA Tactical Wheeled Vehicle Conference  
1-2 February 1999**

**Daniel G. Mehney  
Director, Acquisition Center**

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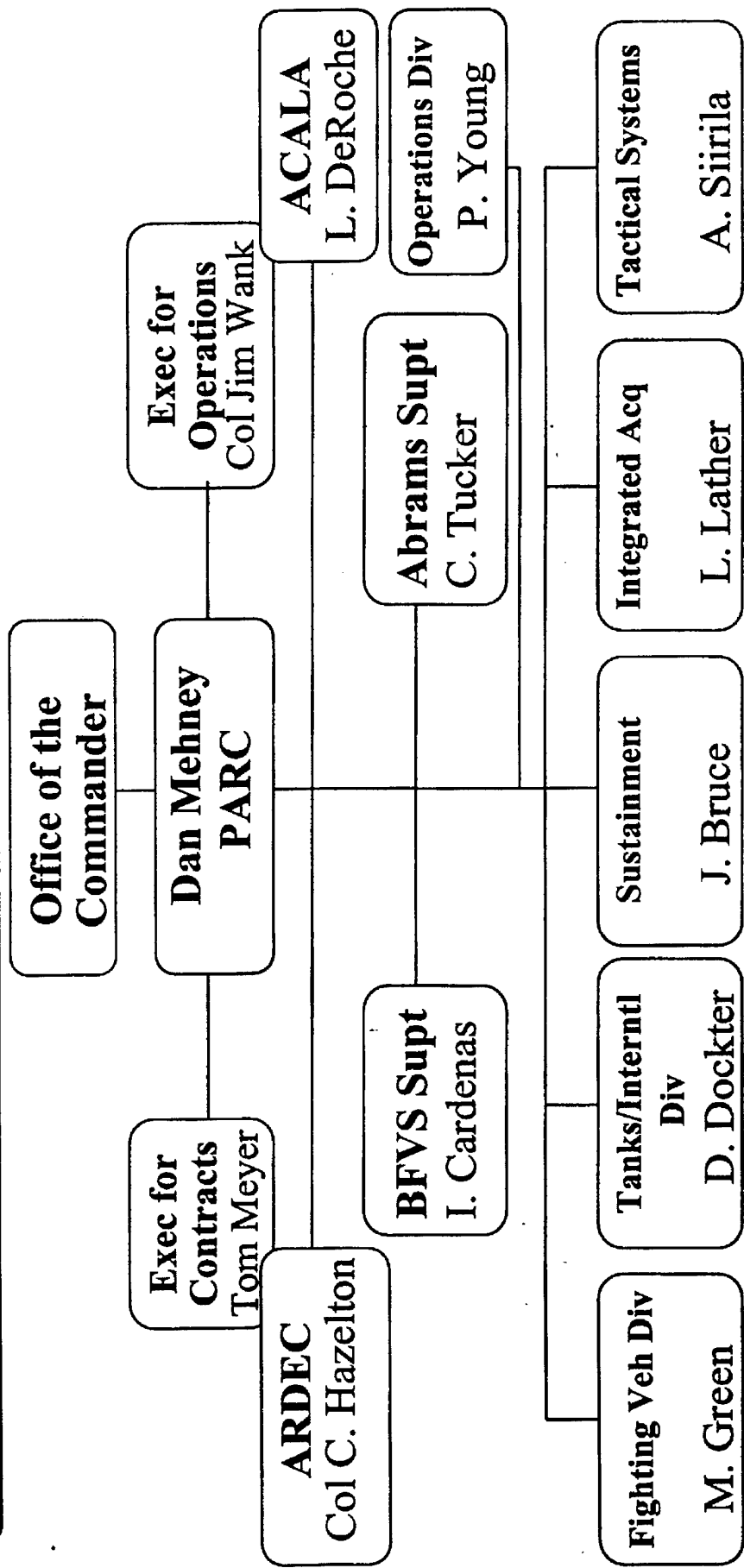
# U.S. Army Tank-automotive & Armaments Command TACOM



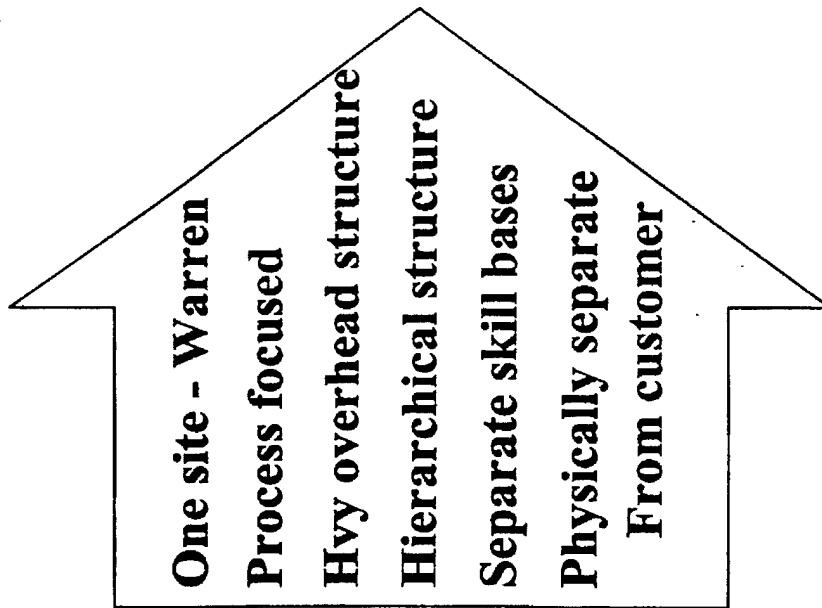
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# ACQUISITION CENTER ORGANIZATION



# ACQUISITION CENTER ORGANIZATIONAL DEVELOPMENT



**One site - Warren**

**Process focused**

**Hvy overhead structure**

**Hierarchical structure**

**Separate skill bases**

**Physically separate**

**From customer**

**3 Sites, 1 Center**

**Customer Aligned**

**Minimal Overhead**

**Team Concept**

**Skill Bases Integrated**

**Partially Co-located**

**with Customer**

**5 Sites**

**Org Integrated**

**Org Structured  
IPTs**

**Multifunctional/Co-located  
W/Customer**

**FY92**

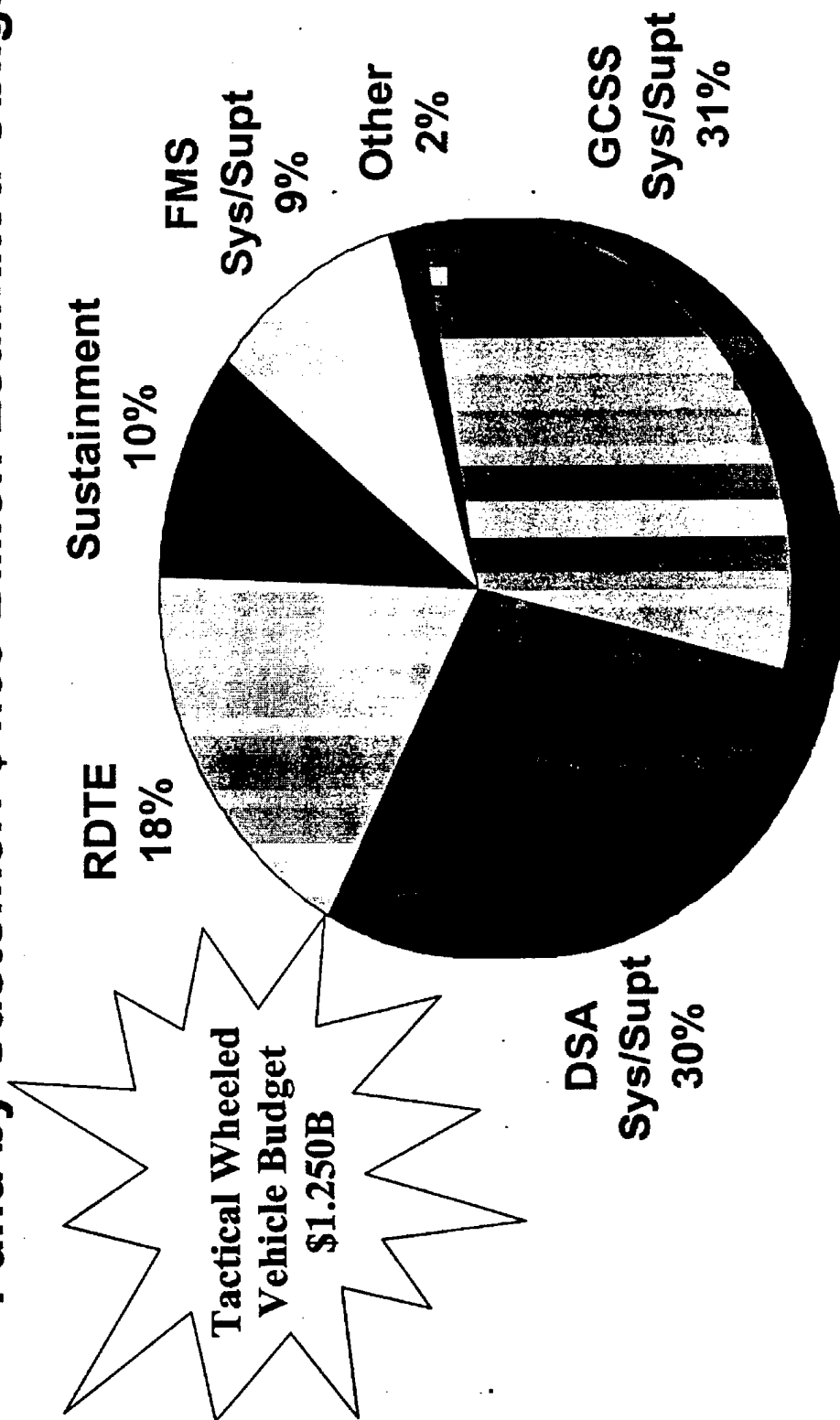
**FY98**

**FY99 (in process)**

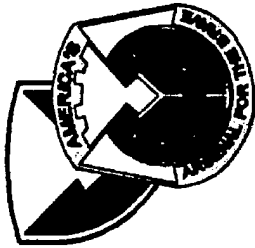
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# TACOM TOTAL FY99 OBLIGATION PROJECTIONS

**Fund by Customer: \$4.59 Billion Estimated Obligation**



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# **U.S. Army Tank-automotive & Armaments Command**



## **Reform & Streamlining Perspective**

**NDIA Tactical Wheeled Vehicle Conference**

**1-2 February 1999**

**Daniel G. Mehney  
Director, Acquisition Center**

6

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# Where We Were!

(FY92)

**Government/Industry  
Relationships**

**“Arms-length” Often Adversarial  
Limited Industry Input  
Functionally Segregated; Consecutive  
Processing**

**Requirements  
Reform**

**Design Specifications  
Government Configuration Control  
Extensive, Redundant Testing  
Unique Processes and Products  
Commercial Items The Exception**

**Process  
Reform**

**Rule Based Process  
Paper Process, Drawings & Aperture  
Cards  
Limited Imprest Fund Authority (<\$50)  
Low Bid Preferred Approach  
Large Inventories**

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# Where We Are!

## Government/Industry Relationships

Partnering  
Integrated Product Teams  
Concurrency in Procurement  
(ALPHA Contracting)  
Alternative Dispute Resolution

## Requirements Reform

Performance Based Requirements  
Contractor Configuration Control  
Simulation in Lieu of Hard Testing  
Single Process Initiative  
Commercial Products & Processes

## Process Reform

Business Based Process  
Electronics/WWW/EDI  
Credit Cards  
Long Term Contracts  
Past Performance Evaluation  
Best Value  
Direct Vendor Delivery

8

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# Where We're Going!



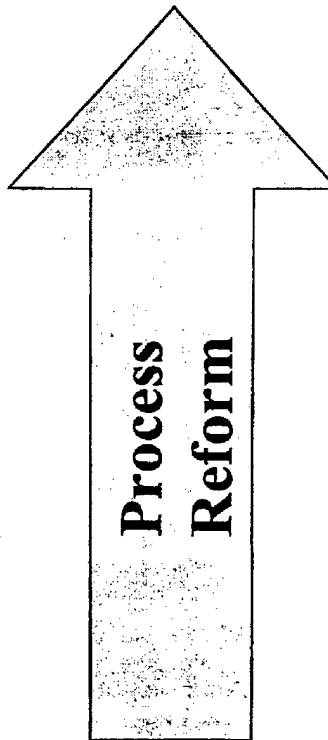
## Government/Industry Relationships

Qualified Supplier List  
Leveraged Business with DCMC/  
DLA & Industry  
Prime Vendor  
Longer Term, Fewer Contracts  
Focus on Small Business Participation  
Corporate Contracts



## Requirements Reform

Shorter Cycle Times  
Logistics Reform & Privatization  
Modernization Thru Spares  
Commercial Products  
Focus On Reducing Cost of  
Ownership/Life Cycle Cost



## Process Reform

Commercial Based Process  
Electronic Contracting & Ordering  
Electronic Shopping Malls/Virtual  
Contracting Web Site  
Expand Credit Card Use  
More Integrated Product Teams  
Automated Best Value  
Buy Response, Not Inventory

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# Current Acquisition Examples

## Vibratory Roller

- Upfront communications
  - ▶ Draft spec released for industry comment
  - ▶ Pre-proposal conference held
  - ▶ RFP posted on the Web
- Streamlined evaluation criteria
- Used oral proposals for some areas
- Performance spec
- Negotiating manual supplementation after award using Alpha
- User to decide how much supplementation based on cost (CAIV)
- Testing only military unique requirements; relying on commercial market acceptability for most requirements

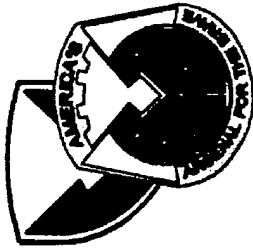
# **Current Acquisition Examples**

## **MTVR**

- **Performance Spec - only 11 MIL-SPECS or MIL-STDs**
- **Shared design/perf simulation capabilities w/contractors**
- **Used modeling/simulation to eval tech areas not tested**
- **Both draft and final Phase II RFP posted to web site**
- **Oral presentations used for portions of Phase II proposal**
- **Electronic data deliverables**
- **Partnering agreement anticipated**

## **Potential/Pending/Recent Regulatory/ Statutory Changes**

- **Price based acquisition - DOD study group formed**
- **Price reasonableness - FY99 Authorization Act requires supporting data from industry**
- **Corporate Restructuring - Proposed rule published to capture savings**
- **Non-conforming mat'l/conditional acceptance - Proposed FAR rule requires PCO to withhold funds**
- **Depot maintenance competition - FY99 Appropriations Act requires comparable cost basis; excludes A-76 requirements**
- **FMS Procedure Reform - ongoing DOD process action team**



# **U.S. Army Tank-automotive & Armaments Command**



## **Industrial Base**

### **NDIA Tactical Wheeled Vehicle Conference**

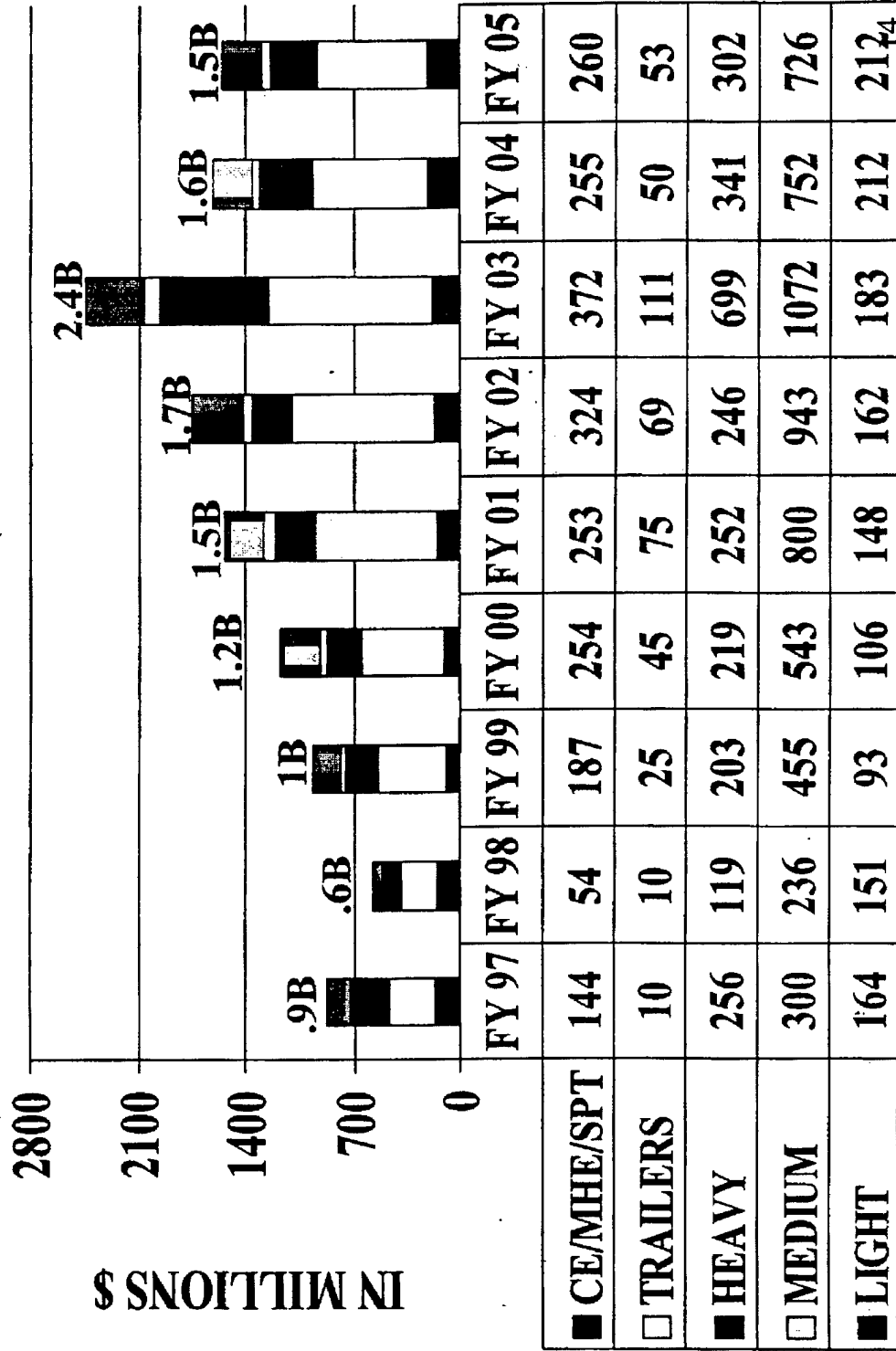
**1-2 February 1999**

**Daniel G. Mehney  
Director, Acquisition Center**

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# TACTICAL WHEELED VEHICLES

## REQUIREMENTS \$\$\$



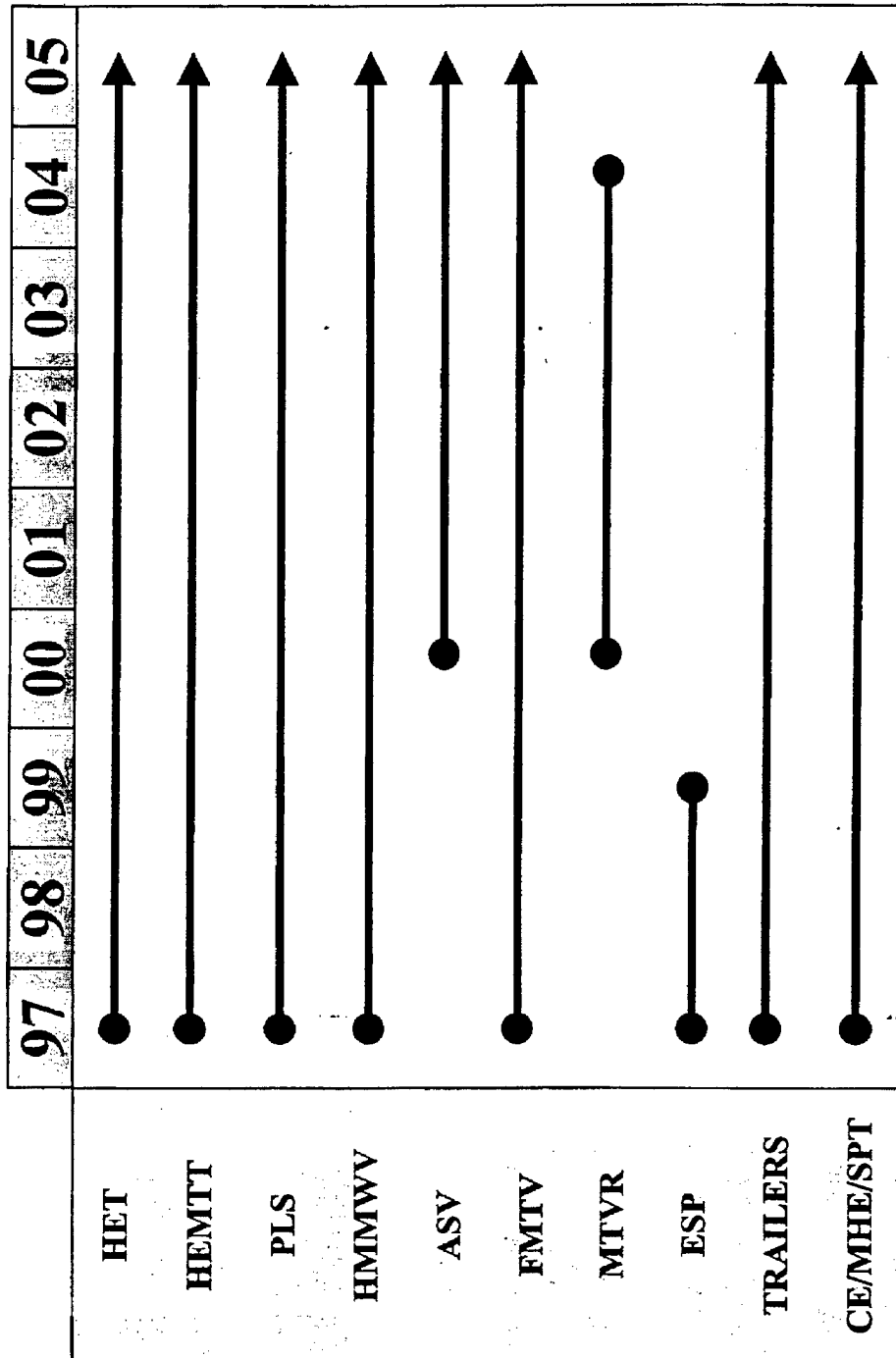
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# TACTICAL WHEELED VEHICLES

## PRODUCTION PROFILE

Fiscal Years



15

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# TACTICAL WHEELED VEHICLES

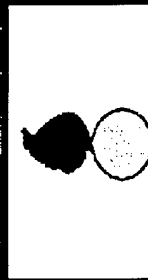
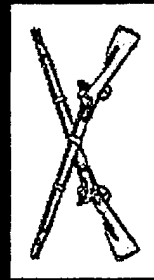
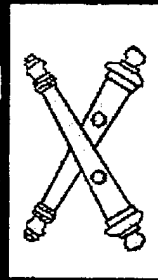
## FUTURE INDUSTRIAL BASE ASSESSMENT

➤ **Tactical Wheeled Vehicle Industrial Base Assessment now in process - Target Completion 30 Sep 99**

- **Essential that industry contributes to the assessment**
- **Study limited to new vehicle production impacts on industry regarding engineering support and STS requirements**
- **Identify parts that will no longer be manufactured so that appropriate resolution can be immediately initiated**
- **Determine industry impacts on Force XXI and Army After Next requirements in order to maintain and sustain an effective Tactical Wheeled Vehicle industrial base**

1999

# Tactical Wheeled Vehicles Conference



Presented by

**Mr. Albert Puzzuoli**

**Deputy Program Executive Officer,  
Ground Combat & Support Systems**



# Mission Statement

To Maintain a Total Army Perspective in Managing  
the Development, Acquisition, Testing, Systems  
Integration, Product Improvement and Fielding  
That Places the Best Ground Combat and Support  
Systems in the Hands of our Soldiers



# Army PEO Structure

## Acquisition Executive Pentagon

MG J. R. Snider  
Aviation  
Huntsville, AL

BG S. W. Boutelle  
Command, Control & Comm Sys  
Ft. Monmouth, NJ

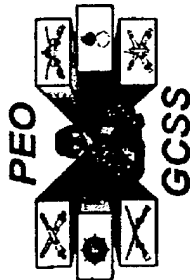
COL S. deKanter  
Standard Army Management Info  
Ft. Belvoir, VA

BG D. L. Montgomery  
Air Missile Defense  
Huntsville, AL

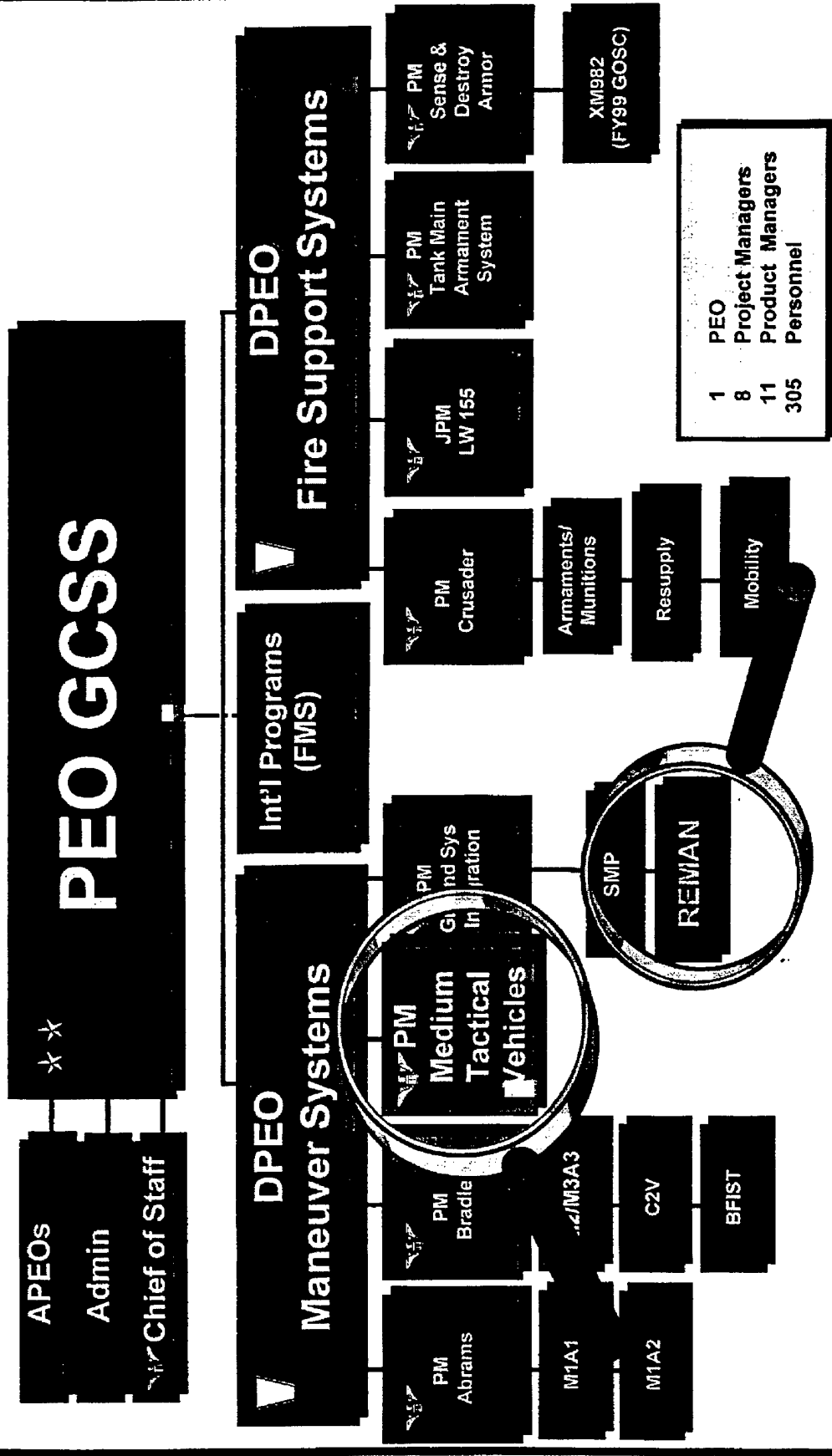
COL (P) J.W. Holly  
Tactical Missiles  
Redstone Arsenal, AL

MG D. Gust  
Intel Electronic Warfare & Sensors  
Ft. Monmouth, NJ

MG J. F. Michitsch  
Ground Combat & Support Systems  
Picatinny Arsenal, NJ  
Warren, MI



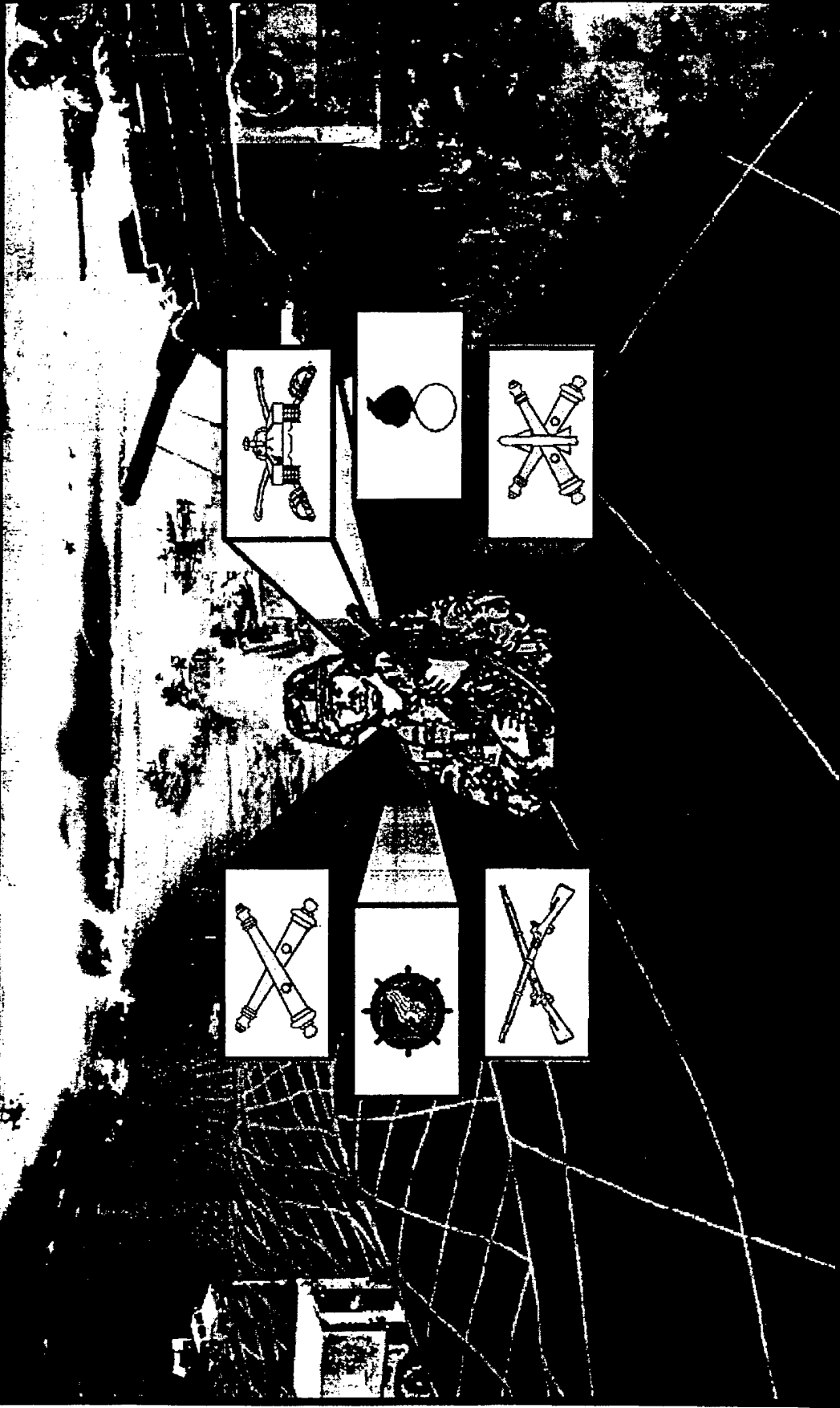
# Current Organization



1 PEO  
8 Project Managers  
11 Product Managers  
305 Personnel



# Procurement and Production

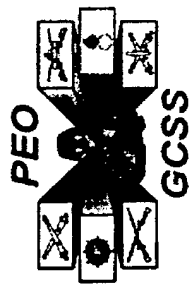




# FMTV Program Background

- FMTV - 14 Truck Models in the 2 1/2 and 5 Ton Payload Class with over 80% Commonality and 2 Complementary Trailers
- 85,000 Vehicle AAO Required over 30 Years
- First Production Awarded in Oct 91 to Stewart & Stevenson (S&S) for 11,300 Trucks in 12 Models
- First Unit Equipped Date - Jan 96
- Second Production (A1) Awarded in Oct 98 to S&S for 8,668 Trucks in 11 Models and 1,560 Tactical Trailers
- Phase I FMTV Second Source Awarded in Oct 98 to AM General and Qshkosh for 3 Pre-Production Vehicles Each





# A1 Model Production Upgrades

## ■ Chassis

- CAT 3126 Engine w/Electronic Control (EPA 98 Compliant)
- Allison World Transmission Electronic Controls (WTEC III)
- Meritor Hub Reduction Axles w/Antilock Brake System (ABS) (DOT 98 Compliant)
- SAE J 1708/1939 Compatible Data Bus

## ■ Interactive Electronic Technical Manuals (IETMs)

- New M1082 Light Trailer with 2 1/2 Ton Payload
- New M1095 Medium Trailer with 5 Ton Payload



# FMTV Production Verification Test

## Consists Of:

4 LMTV 2 1/2 ton Trucks

2 for RAM (20K miles)  
2 for IETM VALVER

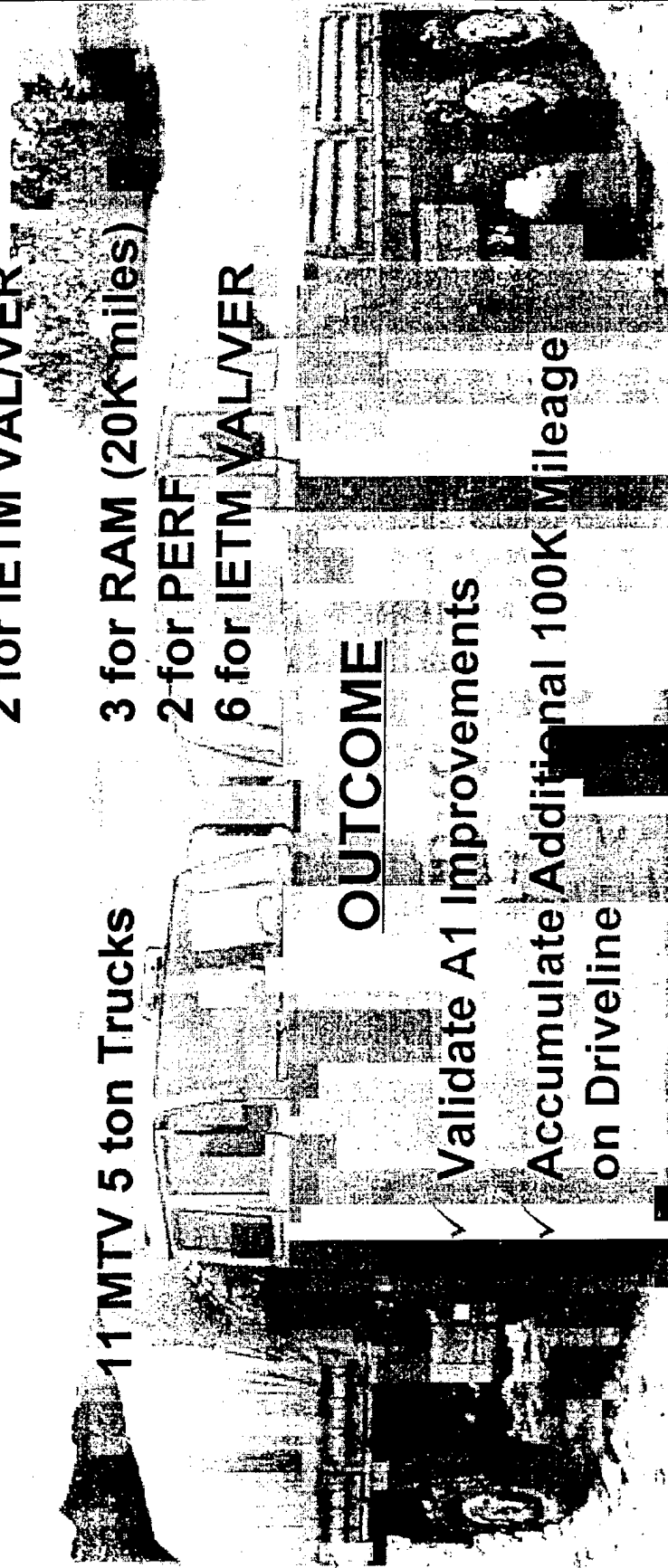
11 MTV 5 ton Trucks

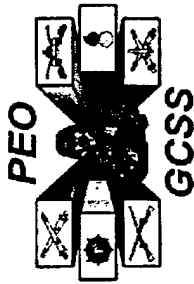
3 for RAM (20K miles)  
2 for PERF  
6 for IETM VALVER

## OUTCOME

✓ Validate A1 Improvements

✓ Accumulate Additional 100K Mileage on Driveline





# FMTV Driveline Improvements

## ENGINE FLYWHEEL HOUSING

- Nodular vs. Grey Iron with Increased Wall Thickness → Increases Strength

## DRIVESHAFT

- Larger Diameter Tube → Reduces Dynamic Deflection

## YOKE

- Full Round vs. Strap Attachment → Increases Retention Force

## U-JOINT

- Nylon vs. Steel Thrust Washers → Increases Fatigue Life



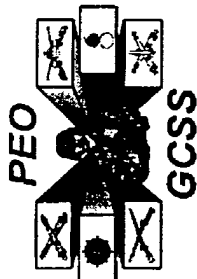
## ESP Current Programs

- Purchased with FY99 Funds 600 Vehicles
- Total Program Buy 5,488 Vehicles
- Production Line Scheduled to Close April 1999
- Fielding Completed by June 1999

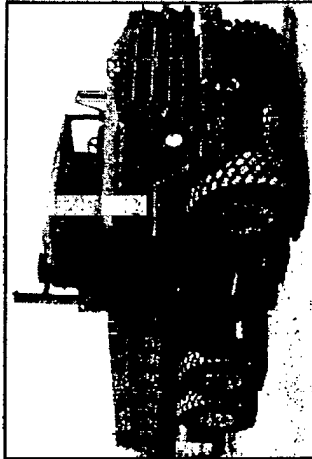


## ESP Termination/Rational

- Insufficient Funds to Support Economic Production of Both ESP and FMTV
- ESP Funds Shifted to Purchase Additional LMTVs for the Reserves
- Medium Fleet Modernized by 2017 With a Mixture of LMTVs and ESPs
- 2 1/2 and 5 Ton Requirements Filled with FMTVs by 2022



# MTVR Requirements



## MOBILITY

Tactical High Mission Profile  
(30% Highway/Secondary Roads,  
70% Trails and Cross-Country)



## CARGO CAPABILITY

7.1 Tons Cross-Country,  
15 Tons Highway



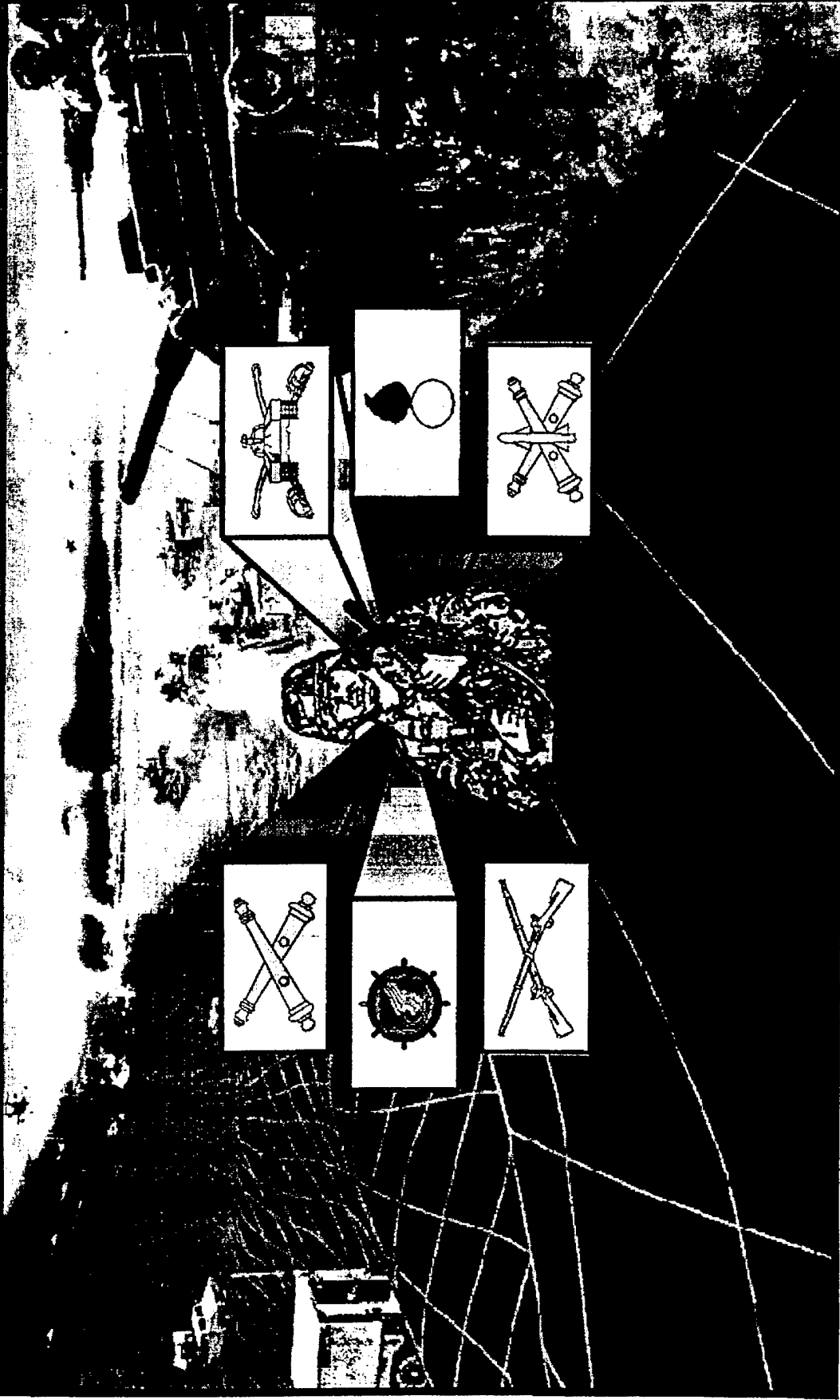
## CH53 HELICOPTER LIFT

Vehicle Weight Less Than  
28,000 Pounds

22 Year  
Corrosion Protection



# Field Support

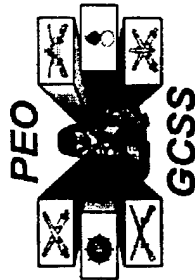




# FMTV Contractor Logistic Support

- Vehicle Manufacturer as Source of Supply
  - DLA Corporate Contract
- Field Focus
  - Onsite Technical Representatives
  - Warranty Program (18 Month/12,000 Miles)
  - Retraining Classes
  - PQDR Responsiveness
- Contractor Parts Support (After Market Sales)
  - 24 Hour Turn Around Time on Part Delivery
  - Full Parts Delivery Support
  - IMPAC Card Response to Field





# MTVR Contractor Logistics Support

## Customer Focus

- Onsite Tech Rep
- 24-Hour Hotline
- Improve Order & Ship Cycle Time
- Reduce Stockage

## Contractor Focus

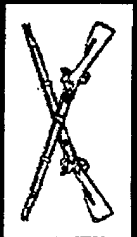
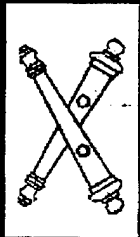
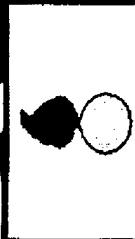
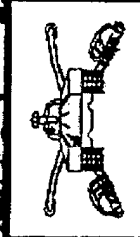
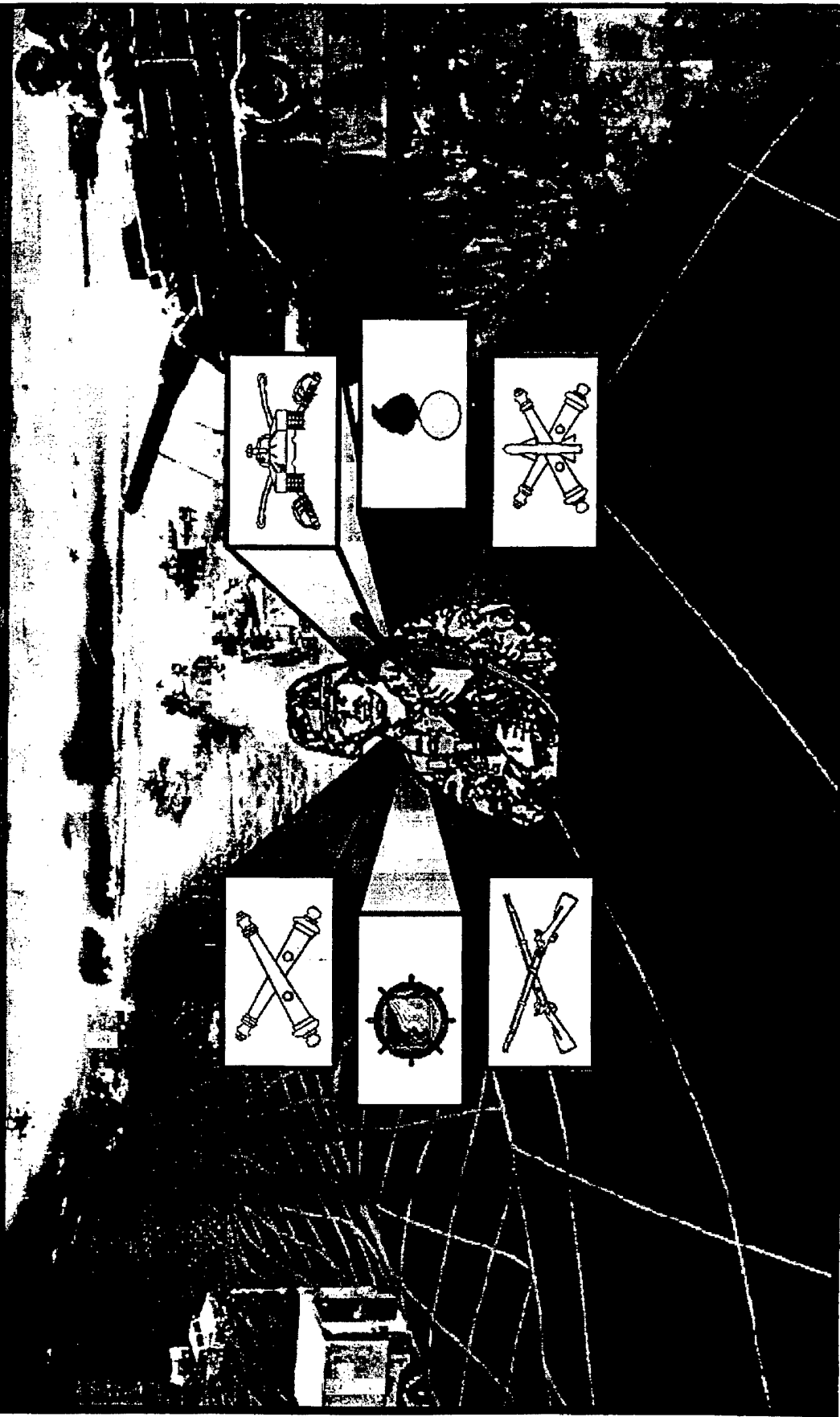
- Beyond Traditional Govt/Industry Supply Method
- Electronic Commerce with Direct Vendor Delivery
- Performance Metrics
- Supply Chain Management
- Encourage Innovation

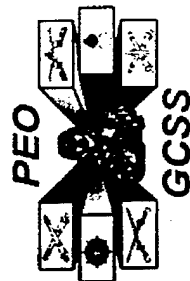
## Partnering

- Warranty Tracking by Contractor
- Life Cycle Cost Accounting
- Total Asset Intransit Visibility

**OEM as Complete Source of Supply**

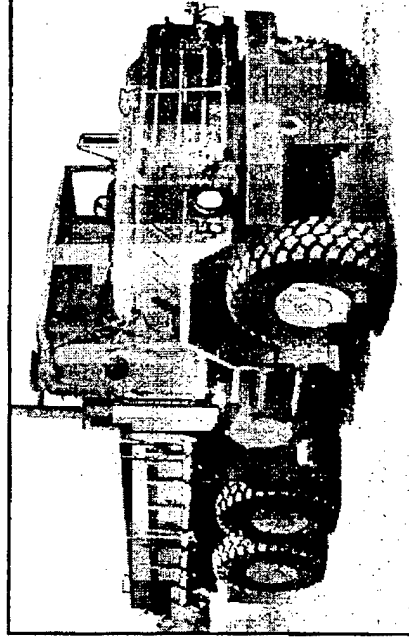
# Emerging Systems & Technologies

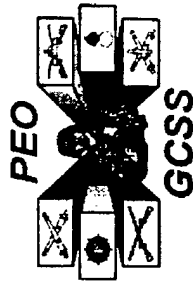




# MTVR Acquisition Strategy

- Two Phase Acquisition
  - Phase I - Prototypes and Testing; Completed April 98
  - Phase II - Downselect to one Production Supplier
- Production Contract Awarded to Oshkosh Truck Corporation
- 5 Year Multi-Year Contract to buy all of the USMC Medium Truck Requirements
- Initial Production Model Will be the Standard and Long Wheel Base Cargo
- Parallel Development Effort for Dump, Telephone Maintenance, Trailer and Wrecker Variants





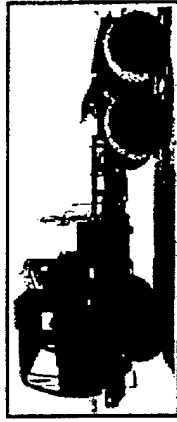
## Second Source Plan/Approach

- **AAE Directive 11 Sep 97** - Introduce Competition at Earliest Junction Possible Within Current Funding Streams
- **Acquisition Plan Approved 27 Nov 97** - Two-Phase Approach to Prepare Second Source for Competition with the Current FMTV Manufacturer in FY03
  - **Phase I** - Multiple Competitive Pre-Production Awarded Oct 98  
Each Contractor Builds 3 Vehicles to System Performance Specification w/ TDP Provided for Reference
  - **Phase II** - Competitive Second Source Production Award  
Downselect Planned in FY00 for 3-Year Multiyear
- **Beginning in FY03** - Stewart and Stevenson and Second Source Compete for Share of Follow-On 5-Year Competitive Multi-year Production Contracts

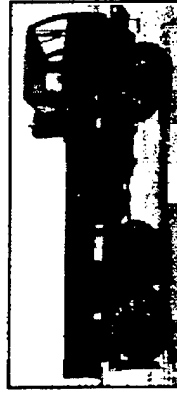


# Second Source Current Status

- Phase I Awarded 30 Oct 98 to AM General and Oshkosh Truck Corporations
- Fixed Firm Price (FFP) Contract to Build Three Pre-Production Vehicles:



MTV TRACTOR



MTV CARGO



LMTV CARGO

- Goal-Achieve Maximum Operational Effectiveness at the Lowest Possible Cost by Maximizing Vehicle Commonality Among the FMTV A1 Fleet  
Emphasis is Placed on Minimizing Operating and Sustainment Costs

## ■ Milestones:

### PHASE I

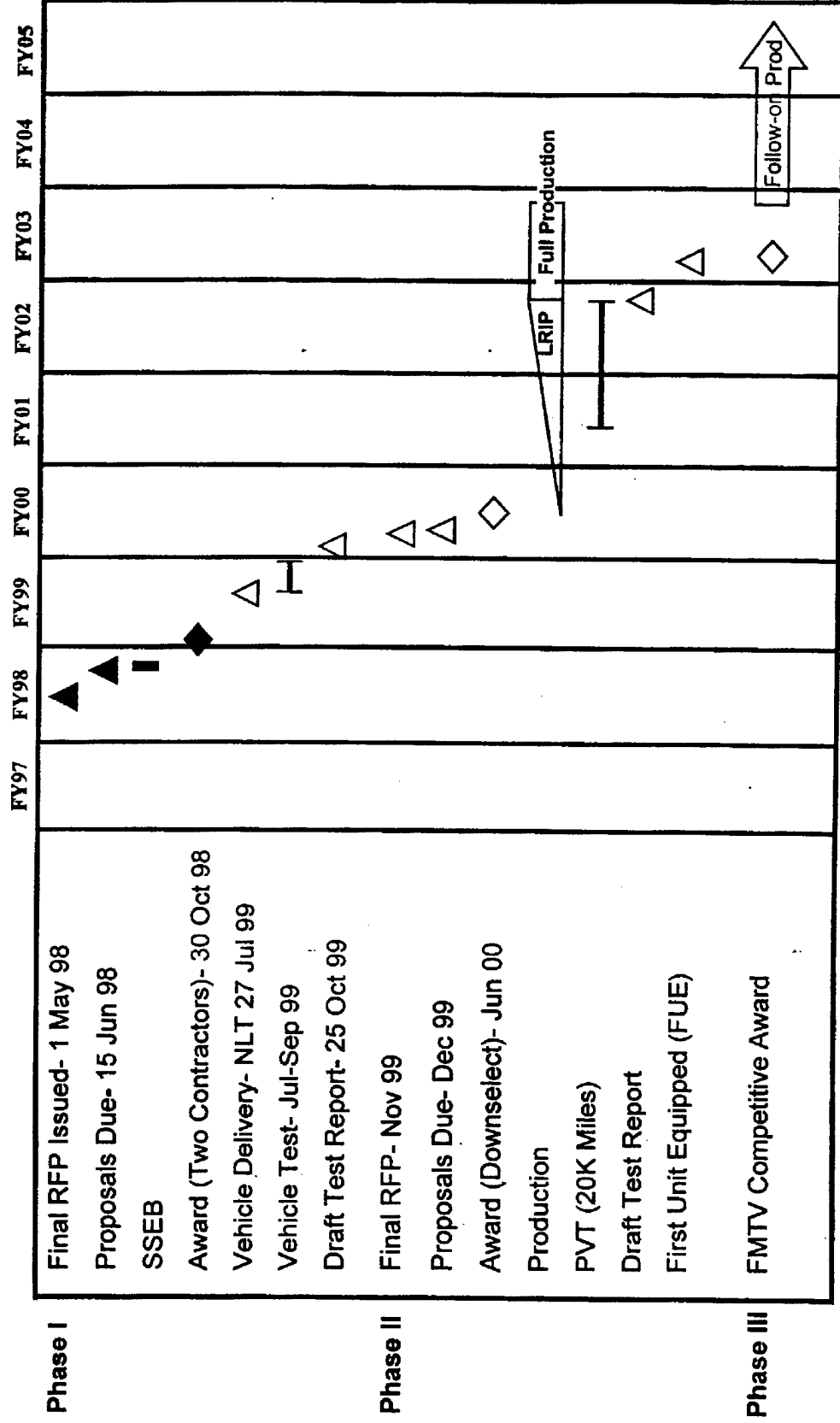
Acquisition Plan Approved	27 Nov 97
D&F Approved	27 Feb 98
J&A Approved	28 Feb 98
Phase I Awarded	30 Oct 98
Delivery	27 Jul 98
6,000 Mile Technical Test	Jul 99-Sep 99

### PHASE II

Release Final RFP	Nov 99
Proposals Due	Dec 99
Source Selection Evaluation	Dec 99-Feb 00
Certification of Compliance	
w/ Congressional Language	Feb 00-Jun 00
Award Phase II	Jun 00



# Second Source Schedule



1/11/99

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NOTE: Gary Reese has been  
replaced by Kraig Siracuse to  
handle relevant Army programs.

1/28/99



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1/28/99

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\*\* The 106th Congress renamed the  
House National Security  
Subcommittee to the Defense  
Subcommittee.

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Jim Gibbons (NV)

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*Joseph K. Pitts (PA)*

*Robert (Robin) Hayes (NC)*

*Steve Kuykendall (CA)*

*Donald L. Sherwood (PA)*

NOTE: The 106th Congress  
renamed the House Committee  
on National Security to the  
House Armed Services  
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Martin T. Meehan (MA)

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Silvestre Reyes (TX)

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Vic Snyder (AR)

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